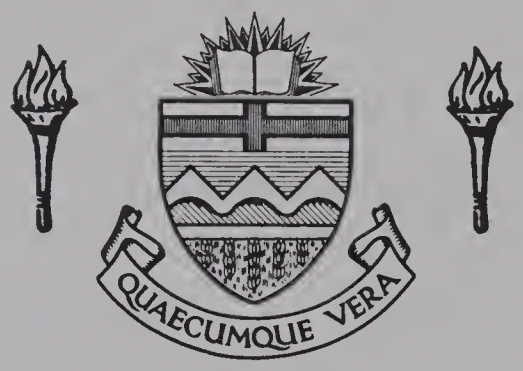
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A UNIT COST ANALYSIS OF THE SASKATCHEWAN COMPREHENSIVE HIGH SCHOOLS

by

© ALEXANDER JOHN YOUNG GUY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

FALL, 1971

Thesis
1971 F
269

UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "A Unit Cost Analysis of the Saskatchewan Comprehensive High Schools" submitted by Alexander John Young Guy in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

ABSTRACT

The research design of this study combined current and complementary expenditures as an approach to the cost analysis of eleven comprehensive high schools. Two types of accounting processes were utilized in the study, the conventional function-object approach, and a programmatic approach, based on twenty-three curricular programs. Costs were reported in aggregate and unit cost form, categorized as direct instructional costs, indirect instructional costs, implementary costs and complementary costs.

A complete computer program package was developed to produce all teacher salary proration costs in the form of direct instructional costs, general preparation costs, specific preparation costs, and three service function costs. Fourteen additional computer programs were developed to produce non-certified personnel expenditures by function-object category and unit cost.

Two types of cost units were reported, a per student-course unit cost and a per student-enrolled unit cost. The former unit was used as a basis for determining course and curricular program costs. The latter was used as a cost base for determining the non-curricular program costs in the study.

A cost pattern was established for curricular programs at the Division IV level. The highest cost curricular programs were: agriculture, technology, structural and electrical. The middle cost range programs were mechanical, commercial cooking, cosmetology, drafting, general, Vocational A, home economics and mathematics. The least cost programs were: Christian Ethics, English, modern languages, physical education, science, social studies and business education.

Two total cost measures were reported, total educational costs based on current expenditures and complete educational costs based on aggregated current and complementary expenditures. The average per student-enrolled total educational cost was $882.03 with a range of costs from $1,087.74 in Comprehensive A to $728.65 in Comprehensive C. Complete educational costs averaged $1,001.73 per student-enrolled in the population with a range within the comprehensives from $1,266.94 in Comprehensive A to $802.70 in Comprehensive G. A trend towards economies of scale was identified on the complete educational cost dimension.

General service function activities, auxiliary service function activities and supervision activities were three non-curricular programs costed. The per student-enrolled cost for these three activities was $92.98, $12.73, and $10.73 respectively.

Complementary costs for ancillary, capital building and site use costs, capital equipment use costs were respectively $18.03, $36.05 and $63.83 per student enrolled. These costs do not represent current expenditures but were costs of the comprehensive schools for the school year 1970-71 which was the basis of this study.

Program emphasis in terms of financial expenditure were determined. Programs receiving the highest financial emphasis were English, mathematics, science, social studies, and business education. Least financial emphasis programs were commercial cooking, media, structural, electrical, drafting, cosmetology and agriculture. The average percentage of total current expenditure for direct instruction was 48.46 per cent. The corresponding percentages for indirect instruction and implementary expenditures were 3.63 and 47.91 respectively.

The inclusion of complementary costs and the programmatic approach to cost analysis provided a more extensive information base for educational decision-makers than the conventional function-object approach to cost analysis.

ACKNOWLEDGEMENTS

The writer gratefully acknowledges the liberal assistance and support of the many individuals and organizations who contributed to the preparation of this thesis. The writer wishes to thank and to acknowledge the assistance of Dr. P. J. Atherton, the faculty advisor, and the Committee members: Dr. G. L. Mowat, Dr. E. J. Hansen, Dr. J. J. Bergen and Dr. J.E. Seger.

Appreciation is also expressed for financial sponsorship by the Saskatchewan School Trustees' Association Research Council in funding this study, and by the Government of the Province of Alberta through the Scholarship Award received by the writer.

The cooperation of the several agencies and persons in supplying the data for this thesis is acknowledged. In particular, the writer wishes to mention the Comprehensive High School Administrators, central office personnel, and teachers, and the Department of Education, Province of Saskatchewan.

The assistance of Mrs. Chris. Prokop who prepared the computer programs used in the data analysis of this thesis is gratefully acknowledged.

Finally, the writer wishes to acknowledge the unselfish support and encouragement provided by his wife, Donna, throughout the period of doctoral study. She, and our daughter Glennys, know only too well what costs were involved when the writer determined educational costs.

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CHAPTER I

INTRODUCTION AND OVERVIEW OF THE STUDY

I. INTRODUCTION

The problem of providing adequate financial support for education, and the allocation of these resources within the various levels of the public supported educational organization is of prime importance in the educational institution.

> Rising costs of education and of all aspects of government are creating concern among taxpayers . . . It is clearly becoming more necessary to assure the judicious use of tax funds for educational purposes (Wells, 1966:5).

Educational decision-makers require extensive information inputs to assure the achievement of educational goals while maintaining a judicious expenditure of tax funds. Cost data is a prime input necessary to evaluate the fiscal aspect of educational decision-making.

Cost analysis provides educational decision-makers with a monetary evaluation of the on-going educational process. Such information can be utilized as a basis for an evaluation of the current program and for guiding future allocation decisions. This study was an attempt to provide educational decision-makers at all levels with cost data information relative to the current operation of the eleven comprehensive high schools in the Province of Saskatchewan.

II. THE PROBLEM

The major purpose of this study was to conduct a cost analysis of the eleven comprehensive high schools in the Province of Saskatchewan for the academic school year 1970-1971, and to provide this cost data in a form that would be of immediate utility to the decision-makers involved. Per student costs were determined on a number of bases: by subject; grade; grade division; specific programs, e.g., matriculation; by general program, e.g., special services; and by school. Two distinct unit cost analysis outputs were produced: (1) A Total Educational Unit Cost - a unit cost analysis of fiscal expenditures; and (2) Complete Educational Unit Costs, including ancillary expenditures, proportional capital expenditures and fiscal expenditures.

General Sub-Problems

1. To determine what subjects were instructed in the comprehensive high schools in Saskatchewan.

2. To develop a viable method of incorporating capital costs, in terms of building and equipment costs, into cost analysis.

3. To develop an electronic data processing system to facilitate cost analysis.

Specific Sub-Problems

The following twenty-one sub-problems were related to each of the eleven comprehensive schools for the school year 1970-1971.

1. What were the total number of subjects offered within each of the population comprehensive high schools?

2. What were the average qualifications, length of teaching experience, salary and age of teachers?

3. What were the average qualifications, length of teaching experience, salary and age of teachers in each curricular program?

4. What were the direct instructional costs per student-course enrollment?

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19. What were the ancillary expenditures made by school authorities other than comprehensive school boards for the transportation of comprehensive students?

20. What were the capital use costs in terms of building, site and equipment for the school year 1970-1971?

21. What was the complete educational per student-enrolled costs by each of the population comprehensive schools?

III. DEFINITION OF TERMS

Comprehensive High School: a secondary school in the Province of Saskatchewan, constructed and equipped under the terms of the Canadian Technical and Vocational Act of 1961-67, which offered, under one administration, a complete academic and technical vocational program.

Student: a person enrolled or registered in a course in one of the comprehensive schools during the period in which student enrollment totals were taken.

School Year: for the purpose of this study, the period from July 1, 1970, to June 30, 1971.

Division III: included the curricular programs provided for students enrolled in grades VII, VIII, or IX.

Division IV: included the curricular programs provided for students enrolled in grades X, XI, and XII.

Cost: in this study was used synonymously with expenditure to refer to the sacrifice made in monetary terms to acquire, produce or effect something.

Unit Cost: related to the type of cost being derived, e.g., student course cost, student-course-equivalent cost, or student-enrolled cost depending upon the point under investigation.

Instructional Cost: was limited in use to designate curricular program expenditures, i.e., direct and indirect instructional costs.

Direct Instructional Cost: that portion of a teacher's salary that was allocated to the scheduled teaching of assigned classes of students.

Indirect Instructional Cost: were those costs assigned directly to a subject or curricular area which were exclusive from direct instructional costs; i.e., instructional supplies, teacher specific preparation cost.

Resident and Non-Resident Costs: referred to the location where cost was incurred. A "resident" cost was allocated directly to a comprehensive school. A "non-resident" cost was one which could not be allocated to a comprehensive school, but to some other educational authority directly related to the school.

Implementary Costs: Those costs which could not be directly assigned to curricular program; e.g., plant operation costs, and debt service costs. A useful distinction between indirect and implementary costs was presented by Duke: "Indirect costs are eliminated when a subject or curricular program is eliminated; implementary costs are not." (1970:8).

Complementary Costs: included those costs not actually paid by the administrative authority governing the operation of a comprehensive, but were costs that are actual costs of educating the students enrolled within a comprehensive. Two types of complementary costs are considered in this study, capital "use" costs and ancillary costs.

Ancillary Costs: were the transportation costs paid by school boards other than comprehensive school boards to transport students enrolled in the comprehensive schools.

Capital "Use" Costs: this term referred to the prorated cost of using the comprehensive building, site and equipment for a school year in relation to the life expectancy in years of the building site and equipment.

Total Educational Costs: referred to all costs incurred by the individual comprehensive school boards for the operation of the population comprehensive during the 1970-71 school year.

Complete Educational Costs: referred to the total educational costs, with the addition of ancillary costs and prorated capital building site and equipment "use" costs.

Curricular Program: referred to a group of related subjects, e.g., all business education courses which comprised the business education program. Twenty curricular programs were specified in this study (See Figure 2, page 49).

Academic Curricular Programs: in this study, included the following: English, Christian Ethics, fine arts, home economics, mathematics, modern language, physical education, science and social studies.

Vocational-Technical Programs: in this study, included: agriculture, business education, commercial cooking, cosmetology, drafting, electrical, general, mechanical, media, structural, technology, Vocational A, driver education, and classroom instructed guidance.

Student-Course: a pupil enrolled in a course or subject in a curricular program. Each student enrolled in a course constituted one student-course unit.

Student-Course Equivalent: a student enrolled in a course or subject which had been standardized on a credit basis; i.e., a student taking a one credit course.

Student-Enrolled: referred to the conventional student unit, based on the enrollment in a school on a specific date.

General Preparation Time: was that portion of a teacher's time utilized in preparation for, and residual activities related to, the instruction of scheduled classes.

Specific Preparation Time: was that portion of a teacher's time allocated to carrying out a function related to subjects taught, but not to any specifically designated curricular course or class of students.

General Service Functions: were those activities conducted in a school which were not directly related to the instruction of a specific subject but facilitated that instruction; e.g., administration, audio-visual, guidance, etc.

Auxiliary Service Functions: those activities, conducted within a school for the development of students, which supplement the regular assigned academic and technical vocational programs; e.g., extra-curricular physical education, school band, group guidance, etc.

Supervision: was that proportion of a teacher's time allocated to the direction of students but not to their instruction in a specific subject field; e.g., study hall supervision, library supervision, etc.

Function-Object Classification: referred to the grouping of items of expenditure (objects) associated with the type of activity (functions) that had a broad common purpose, e.g. plant operation.

Program Accounting: a type of accounting that organized the inputs into activities which were designated as "programs."

Program Budget Format: a budget format which attempted to display expenditures by curricular programs rather than by function and object category

only.

Average: this term was used synonymously with "arithmetic mean" throughout this study.

IV. IMPORTANCE OF THE PROBLEM

The Hon. J. C. McIsaac, Minister of Education of the Province of Saskatchewan, in an address to the 1969 Annual Conference of the Saskatchewan Council on Educational Administration stated:

> The second major aspect of the problems of education is that of the development of comprehensive goals and objectives, and the explicit establishment of priorities for various programs within education itself.
>
> It is one thing to maximize the resources available to education; it is another matter to divide these resources among the various programs and levels of education in accordance with our goals and objectives, and, in such a way that the maximum value is received for expenditures made (1969:31-32).

McIsaac outlined the steps for receiving the maximum value for expenditures. These were: (1) the development of the goals and objectives of Saskatchewan education, (2) to break these objectives down into programs discrete enough to permit a dollar tag to be put on each one, and, (3) to analyze the resources available for the accomplishment of these objectives (1969:31-32).

The Minister of Education recognized the difficulty of measuring the outputs in education and of aligning all programs on a scale of priorities. He nevertheless was adamant in stating the basic need for setting priorities and for making choices on the basis of cost and cost benefit analysis.

> The whole point, is however, that one way or another- explicitly or implicitly -- choices are now being made to an unacceptably large extent. I believe these choices are being made without looking at costs and corresponding benefits. I say only that the system of making these choices must become more rigorous. It must become more of an explicit, conscious part of educational decision-making (1969:32).

McDowell, in an address to the same convention advanced the point for the need for fiscal planning in education.

> Because there cannot be an unlimited increase in the amount of money available for education, and because so many new educational needs are emerging, it is necessary that careful attention be given to patterns of organization that may produce greater returns from every available dollar (1969:24).

Hill and Mattox stated a parallel opinion in regard to the need for cost information:

> School district officials need information about the relationships between costs and achievements. Only with such information may objectives be pursued more effectively and efficiently. The allocation of scarce resources may be divided in terms of the expected benefits; the effectiveness of the decision may be assessed in terms of its results. Among alternative objectives, the more prized objectives should be sought. . . Today, school district officials do not have enough information to make and check the effectiveness and efficiency of their plans (1967:5-6).

This cost analysis of the operation of the comprehensive high schools in Saskatchewan provides an information base for effective and efficient educational planning. The measurement of current expenditures by means of cost analysis provides baseline information for the use of economic planning processes such as cost-benefit analysis, cost-effectiveness analysis and Planning-Programming-Budgeting Systems.

This study attempts to make a significant contribution to Saskatchewan

education. These contributions are:

(1) through the integration of cost analysis conducted in the comprehensive high schools in Saskatchewan.

(2) by developing a framework for cost analysis as a basis for data systems, decision-making, evaluation and the use of economic planning processes.

(3) by providing baseline data of financial statistics, with province-wide implications, relative to the comprehensive high schools.

(4) by providing to the comprehensive high schools, the comprehensive high school boards, and the Department of Education, findings applicable to budgeting, data processing, evaluating and decision-making processes.

Importance to the Development of the Cost Analysis Process in Education

There has been a long-standing need for the development and refinement of the cost analysis processes in education. This study attempts to improve the cost analysis processes used in previous educational studies by acting on the recommendations of previous cost-analysis researchers. The following recommendations were made by previous writers:

> Capital costs should be included, that is, cost analysis should not be limited to current operational cost. Longitudinal studies in this respect are needed (Duke, 1970:230).

Capital costs encompassing building, site and equipment are included in the study as recommended by Duke.

> A computer program that will handle, direct, indirect, and implementary costs should be developed after an inital survey of the data, but prior to the collection of it (Duke, 1970:239).

A viable generalized cost analysis computer program was developed for use on this and subsequent cost analysis studies, as recommended in the Duke study.

> Comparative data from other institutions are not readily available. . . Even when financial statistics for other institutions are obtained, differences in classification and accounting practices may prevent the derivation of reliable data for comparative purposes. There is a crying need for reliable normative data on the expenditures of institutions of higher education (Russell and Doi, 1955 :20).

Normative data, permitting comparison, were produced from each of the eleven comprehensive high schools. These data were obtained using standard classification and accounting practices throughout and may provide the reliable comparative data required by Russell and Doi.

This study examined the complete expenditures of the eleven comprehensive high schools, in terms of current expenditures, the prorated capital cost expenditure, and ancillary expenditures. This complete unit cost analysis is an attempt to incorporate the recommendations of previous cost analysis researchers, to produce a further refinement of the cost analysis processes in education.

V. SUMMARY OF CHAPTER I

The demand for accountability in education has increased in all levels of the public domain. School boards, taxpayers, and the public at large have questioned the ever-increasing expenditures made in education, and have demanded an evaluation of the accomplishments of education.

Cost analysis provided an immediate monetary evaluation of educational financial inputs. These were presented in a programmatic framework which provided administrators with a basis for the evaluation of current educational processes, and provided a foundation for planned changes in education.

Succeeding Chapters

Chapter II provides a review of related literature with an emphasis on cost analysis, program accounting, and educational planning. Chapter III presents the research design of this study. Chapter IV describes the research procedure employed, including instrumentation, sources of data, data collection and treatment. The analytical and descriptive aspect of the treatment of data is presented in Chapter V. Chapter VI includes the summary of findings and the conclusions and implications of the study. The appendices contain much of the primary and auxiliary data used in the study.

CHAPTER II

REVIEW OF RELATED LITERATURE

The literature reviewed in this chapter is structured into three sections: (1) the function of cost analysis in education, (2) a description of the major components of cost analysis, and (3) the function of cost analysis in educational planning.

The first section considers the historical development of the use of cost analysis in education, provides a definition and description of the cost analysis technique, and determines the purposes of cost analysis. The second section describes the accounting systems required for cost analysis and discusses the major elements in a cost study. The last section describes the function of cost analysis in relation to the economic planning processes of cost-benefit analysis, cost-effectiveness analysis, and Planning-Programming-Budgeting Systems (PPBS).

I. COST ANALYSIS IN EDUCATION

Historical Development

Three distinct periods are identified in the use of cost analysis in education, (1) the pre 1920 period, (2) the 1920 to 1960 period, and (3) the current re-emphasis of the use of cost analysis.

Kelly (1923) and Stevens and Elliott (1925) provide a description of the early cost analyes conducted in education. Callahan (1968) provides a more extensive description of the development and use of cost analysis techniques during this period.

John Dale Russell was one of the major advocates of the use of cost analysis during the second period. He developed and tested techniques for systematically analyzing the expenditures of colleges and universities throughout the 1920's, 1930's, and 1940's (Cage and Manatt, 1969). Russell and Doi (1955) in a series of twelve articles in College and University Business provide a detailed description of the cost analysis technique developed by Russell.

A resurgence of interest in the use of cost analysis during the 1960's developed as a result of renewed interest in accountability and cost control in education. At Iowa State University, B.N. Cage (1968) completed a cost analysis of educational programs at the Iowa Community Colleges, and R. Deputy (1969) repeated this study using selected high school programs. At the University of Alberta, Atherton (1968) and Workman (1969) used cost analysis as the basis of studies of the operational expenditures of four community colleges in Alberta. In a project funded by the Alberta Department of Education, under the direction of P. J. Atherton, cost analysis studies of the educational operations of Alberta counties were conducted by Myroon (1969), Eurchuk (1970) and Palethorpe (1970). Duke (1970) conducted a

cost analysis of a selected sample of schools within a large urban school system in Alberta.

The Definition of Cost Analysis

Cost analysis, as defined in this study, is synonymous with the definition of expenditure analysis, provided by Russelland Doi:

> Expenditure analysis is a technique for obtaining from raw financial data information that will enable administrative officials to draw some conclusions and make intelligent decisions regarding the operation and status of the institution . . . It is also an effective means for portraying to friends and critics of the institution, its financial situation, and the justification for its requests and support (1955 : 19).

Judy considered cost analysis as a method of financial reporting, and he defined the technique's relation to the process of cost accountancy:

> These new methods of financial reporting attempt to collect and present cost information so that it can be related to programs and objectives of the university (or other educational institution). . . Cost analysis is pervaded by the spirit of cost accountancy as contrasted with the more traditional accounting concepts that underlie conventional university financial reporting. Most cost analyses are program orientated, and to the extent they are, they represent a definite improvement over conventional reports (1966 : 6-7).

Miller expanded Judy's definition by defining cost analysis as:

> . . . a means of quantifying the expenditure patterns of an institution or agency by measuring the unit costs of present and past operations. . . In the case of cost analysis the gross measures of both program and cost are known factors, and the relationship between them is the unknown factor (1964 :6).

Fowlkes and Hansen in defining cost analysis developed an operational definition at the school system level:

> Cost analysis is the process of studying the total cost of public education for a given community, state, or area for a given year; trends in total school costs; the costs of specific services, e.g., transportation or English, the cost of education by grades or levels, e.g., elementary school costs, secondary school costs; costs of nonattendance; costs and tax paying ability; cost and size of school, reasons for increased costs; reasons for decreased costs; need for increased costs and need for decrease in costs (1952 :47).

Russell and Doi describe two methods used for analyzing institutional expenditures after they have been classified. The second method described has relevance for this study.

> The first is to find what percentage of the total expenditure for a broad category, such as education in general, is devoted to each of its subclasses. The second method is to relate expenditures for some selected function to some measure of services produced. This second method yields data generally referred to as unit costs or unit expenditures (1955 :20).

Unit cost analysis, for the purpose of this study, referred to the detailed determination of all educational expenditures, including capital and ancillary expenditures, in the comprehensive high schools in Saskatchewan. These expenditures were for specific functions, activities, services and programs. The conversion of these expenditures into unit costs on a student enrolment basis, the examination and analysis of the resultant per student unit costs, and the presentation of unit costs in a program budget format were the major outputs of this study.

The Purposes of Unit Cost Analysis

The predictive function of cost analysis was identified by Dei Rossi:

> Cost analysis can be thought of as encompassing those activities by which cost and program data are compiled, and used to estimate and project future cost (1969 :99).

Hull expanded the functional basis of the process by listing the major purposes of cost analysis as: (1) to measure instructional costs by all meaningful divisions of level, function, type of unit, curriculum, and class organization; (2) to understand what components comprise costs and how changes in these components affect cost levels; and (3) to predict future costs when changes in cost components are introduced (for example, changes in enrolment, faculty salaries, or workloads) (1962 :372).

Cost analysis was recognized as a major component of the economic planning processes: cost-benefit analysis, cost-effectiveness analysis, and PPBS. These processes were designed to assist educational decision-makers to define objectives, elaborate alternatives, to assess the effectiveness of these objectives and alternatives, and to seek efficiency in the operation of educational organizations. The relation of cost analysis to economic planning processes is discussed later in this chapter.

II. THE MAJOR COMPONENTS OF COST ANALYSIS

The major components of a cost-analysis study are the accounting system used, the cost of educational services, and the product or number of teaching units produced.

The Accounting System

Studies of cost analysis in education depend on adequate accounting systems for the collating of raw data. Knezevich has amplified this view: "It would be extremely difficult, if not impossible, to have meaningful unit cost analysis without designing an accounting system to satisfy such purposes." (1960 : 153).

Two broad categories of budgeting systems operate within education, the conventional function-object budgetary system and the program budgeting system.

The Function-Object Budgeting System. The conventional budget structure was designed mainly to facilitate administration and account control. Schwarz (1968 :27) described the structure of such a budget:

> The budget structure suitable for administrative implementation and account control is usually input or object orientated. In this case, the educational budget usually is divided into different appropriations for teachers' salaries, school materials, school buildings, etc.

Expenditures classified within the function-object budget vary from system to system but in general six classifications are utilized. These are summarized by Lynn: (1) fund, (2) function, (3) character, (4) activity, (5) object, and (6) school. (1956 :200-201). The Federal Government of Canada recommend the following classifications of expenditure.

(1) by purpose, i.e., the activity or activities which the responsible unit is engaged in,

(2) by source, i.e., the organizational unit responsible for initiating the expenditure or providing the service from which revenues are obtained, such as responsibility centres (schools),

(3) by object of expenditure, i.e., salaries, travel, material, etc. (1966:30).

The Saskatchewan Department of Education preliminary budget form, designed for all school jurisdictions, was structured on a function-object classification which included the following expenditure categories: (1) Administration, (2) Instruction, (3) Other Educational Services, (4) Plant Operation, (5) Debt Charges, (6) Ancillary Services, (7) Contribution to Capital, (8) Provision for Reserves, (9) Pupil Transportation, and (10) Payments to other School Systems.

Hirch described the function-object budget system operable in the majority of Canadian school systems as an instrument of control rather than of planning:

> The conventional budget has evolved over many years and is shaped mainly by the desire to safeguard appropriations against carelessness and malfeasance. Thus the traditional administrative budget does not relate required resources and costs directly to the specific outputs or goals achieved. It is therefore not a base instrument for planning and managing the educational enterprise. Its main concern is with live items . . . and thus it is more a comptroller's budget than a manager's budget (1968:93).

Program accounting systems. The program accounting system is output oriented, in that it allows the activities of several departments and offices

to be assembled as specific output packages, e.g., programs and sub-programs, of various levels of aggregation.

It is difficult to determine an ideal type of program structure, and little agreement exists on program categories. Hartley states the case definitively: "There is no single best format for schools." (1968:122).

Hartley does however describe three basic approaches to devising a program structure:

> The first is to use organizational, or grade level categories. Programs might include: 1) early childhood, 2) primary grades, 3) intermediate grades, 4) middle school, 5) technical high school, 6) comprehensive high school, 7) junior college, 8) adult education, etc.
>
> A second approach, and probably the ideal type, is to devise programs on the basis of curricular (subject matter) organization. Direct and indirect costs are apportioned to subject area, such as: 1) language arts, 2) science, 3) mathematics, etc. The third option is a hybrid format which combines grade level organization at the elementary level with subject matter organization at the secondary level (1968:122).

When a program structure has been selected, cost analysis provides the required data on past and current expenditures. However, a program budget must have a long term horizon for adequate planning.

> A simple projection of the most recent budget is insufficient. Instead, just as the program budget for this year should reflect alternatives, a budget for future years requires a view of the world of tomorrow, an evaluation of the pros and cons of alternative programs and activities, the selection of the most desirable ones, and assessment of implications for each year's decisions on future resource use (Hirch, 1968:97).

Furno criticized the program accounting system and described the collection of program activity statistics as a Herculean task. He further argued

that:

> What the structure of programs costs should be, no one really knows. Some persons think that school districts, particularly the large systems, should seek to attain the ideal . . . in other words, program costs for subject matter by grade level, with costs assigned to each school in the system. The literature abounds with such propaganda particularly by college professors. Before anyone takes his school system down this primrose path, he should weigh seriously the benefits to be derived against the cost involved. Program costs by subject matter by grade level by school involve a vast amount of work because it necessitates the gathering and manipulation of numerous cost items (1967:13).

Educational Service Costs

The first major factor to be isolated in a cost study is the cost of educational services (Williams, 1959:28). In the determination of educational costs, Williams lists four primary factors or bases:

> (1) professional staff salaries, both direct and deferred in annuities and retirement programs;
>
> (2) the number of hours a week taught by teachers;
>
> (3) the number of students enrolled in classes taught by staff members;
>
> (4) costs of maintaining plant, library, administrative and other support services (1959:28).

Williams listed only those factors upon which fiscal expenditures were made, but another factor for consideration in arriving at complete educational costs, is the factor of complementary costs.

Commenting on the Expert's Committee report on program budgeting sytems for the entire Swedish administration, Hammar stated:

> The Committee's budget system does not only display expenditures in the form of grants to authorities as in the present budget, but also contains what we call complementary costs. The budget table will, in principle, have two columns:
>
> (1) expenditure
>
> (2) total costs
>
> the difference (2) - (1) being the complementary costs not actually paid by the agencies (school boards) such as costs for pensions, fees to social security, office units and estimated depreciation costs for investments made from capital investment programmes not included in operational programs. Such costs are now not paid by the agency (school board) in question (1968:292).

This study included both a cost analysis of current fiscal expenditures, and of complementary costs. The former costs were considered as direct instructional costs, indirect instructional costs and implementary costs. The latter complementary costs were considered as ancillary costs and capital "use" costs.

Two major difficulties in determining educational service costs are: (1) the proration of indirect and implementary expenditures to instruction in current fiscal expenditures, and (2) the inclusion of complementary costs in unit cost analysis.

The proration of indirect and implementary expenditures to instruction. A number of techniques exist for allocating indirect expenditures to instruction. Workman listed three of the best known techniques. These were: (1) the straight line method; (2) the primary use plan; and (3) the progressive primary use plan (1969:20-24). Of these techniques, the most commonly

used was the straight line method.

Reason and White outlined the most common methods for prorating indirect and implementary expenditures to instruction. These were: (1) time; (2) time and average daily membership or time and average daily attendance; (3) time - floor area; (4) hour-consumption; (5) number of students; (6) mileage; (7) quantity consumed (1957:162-166).

Dei Rossi (1969:49) questioned the feasibility of prorating implementary costs:

> . . . the allocation of support costs, such as Administration, should be made to other programs only if it is actually possible to relate these activities or purchases giving rise to the program directly. No attempt should be made to allocate or prorate general support costs to other programs on the basis of arbitrary although logical rules.

Duke (1970:26) also dealt at length with the difficulties associated with priority decisions.

Complementary costs. The inclusion of complementary costs in educational unit cost analysis has been questioned. Operational or current fiscal expenditures are actual measurable costs, while complementary costs are tentative costs which do not represent an actual expenditure of the administrative authority of a school during a specific year.

The inclusion of ancillary complementary costs in this study is without precedence in the unit cost analysis studies previously conducted. The unique operational nature of the comprehensive schools used as the population of this study accounts for this lack of precedence.

Many of the previous educational unit cost analyses have not considered the capital cost of buildings and equipment as items of expenditure. The justification for the elimination of capital expenditure is summarized by Cage and Manatt in the statement:

> Because of the recent establishment of many of the programs in the institutions, the initial investment for buildings, sites and equipment has been great. To include these expenditures as a current cost for particular fiscal year would not show the true cost picture for that year. Thus, the equipment and increase in plant expenditures were not considered in determining current instructional costs, since such expenditures enhance the valuation of the school's investment and are not properly chargeable against the fiscal year's operation (1969 :68).

The inclusion of capital cost in an analysis of expenditure is, however, supported by Musgrave. In discussing budgets in social accounts, Musgrave contended that, as an index of economic performance, capital expenditure must be allowed.

> Final expenditures of government may provide for current consumption or for the purchase of durable consumer goods . . . If durable goods are acquired, consumption is made possible free of direct charge in subsequent periods. However, the division of the net product between consumption and capital formation will be distorted in future years unless imputed income and capital consumption are recorded (1959 :190).

In this study capital expenditures were included as tentative costs, not as current expenditures. The inclusion of tentative costs was based on the concept that the consumption of capital through the use of capital buildings, sites and equipment during the year represents an expense incurred related to the current operational year, regardless of the time in which the actual capital expenditure was made.

Product of Number of Teaching Units Produced

The second major factor in cost analysis identified by Williams (1959:28) is the isolation of outputs. The number of students served can be considered as one form of output (Atherton, 1968:9). Duke (1970:28) expanded the student-served concept, and pointed to the lack of other output criteria in education.

> A ratio of instructional costs and the output (number of pupils enrolled) provides a unit cost figure. The future utility of cost analyses in general is contingent upon the identification and qualification of other educational outputs. For instance, demonstrated relationships between cost and quality of education are needed.

The teaching units used in this study reflected the number of students enrolled in courses, curricular programs, curricular areas, and comprehensives. The student-served basis was the output measure used in this study as a criteria of educational evaluation.

III. THE FUNCTION OF COST ANALYSIS IN EDUCATIONAL PLANNING

The role of the economic planning processes in this study was limited to providing a conceptual framework. The purpose of this section is to determine the function of cost analysis in the three planning processes, which has relevance for the outputs of this study.

Although there have been substantial increases in the proportions of public resources allocated to education, governments have become increasingly

concerned with the efficiency with which educational dollars are spent in the face of conflicting demands for the public dollar by agencies other than education.

In the face of these conflicting demands for the public dollar, governments have turned with increasing frequency to economists, whose chief interest is the study of the problems of allocating scarce resources to competing ends. Three of the techniques used by economists in decision-making are cost-benefit analysis, cost-effectiveness analysis and PPBS. These techniques are currently being investigated by governments to determine their relevance as educational planning tools.

Cost-Benefit Analysis, Cost Effectiveness Analysis and PPBS

"Cost-benefit and cost-effectiveness analysis have very little conceptual difference (Atherton, 1971:4)." Cost-benefit analysis is concerned with meeting a stated objective at the lowest cost or obtaining a maximum gain for a specific amount of resources. Cost-effectiveness analysis is based on the attaining of maximum fiscal efficiency through the restructuring of objectives to suit available resources.

PPBS requires researchers to employ both cost-benefit and cost-effectiveness analysis. Poindexter (1969:207) describes the cyclical operation of PPBS as including:

(1) the setting of objectives based upon cultural values, the desires of society, and the wealth and inventory of resources at hand,

(2) the selection of program from alternative programs available to enable the attainment of objectives based on program costs,

(3) the implementation of selected programs,

(4) the translation of programs into long range financial plans,

(5) striking an annual budget to allocate resources to the selected programs,

(6) the evaluation of program outputs in terms of objectives, and

(7) a review of the programs offered resulting in changes to obtain more desirable outcomes.

The Function of Cost Analysis in the Economic Planning Techniques

The value of cost-benefit analysis, cost-effectiveness analysis, and PPBS techniques in educational planning depends on the degree to which measures of cost and benefit can be defined and accepted.

> Before any cost-benefit or cost-effectiveness analysis can be accepted as a meaningful part of a decision-making system, there must be consensus as to what is being measured. Moreover, there must be consensus that the measure which is chosen is an accurate reflection of the objective (Atherton, 1971:7).

The cost analysis process provides the measures of costs utilized in the three planning techniques as required to:

(1) determine past unit costs of the operation of the system,

(2) determine present unit costs, and

(3) evaluate, in terms of cost, the decisions made as a result of the analysis and reporting function of cost-benefit, cost-effectiveness

and PPBS techniques.

Measures of benefits, however, have not been developed to the degree of refinement necessary to obtain consensus from educators as to the current utility of the techniques:

> We simply do not know how to accurately measure benefits of education that are not directly reflected in enhancing lifetime earnings of educated people, and all economists, whatever approach they have adopted towards educational planning have been guilty of ignoring these indirect benefits (Blaug, 1968:181).

IV. SUMMARY OF CHAPTER II

Cost analysis was discussed as a means of quantifying the expenditure patterns of educational institutions by measuring the unit costs of present and past operations. The accuracy of cost analysis was conditional upon the type of accounting system used. Two types of accounting systems were considered, the function-object accounting system and the program accounting system.

The complete cost of the education of a student enrolled in an educational institution included both fiscal expenditures and complementary costs. The inclusion of capital "use" costs and ancillary costs, as complementary costs to be considered in cost analysis, was documented.

The role of cost analysis is to: (1) determine past unit costs of the operation of the education system, (2) determine present unit costs, and (3) evaluate, in terms of cost, the decisions made as a result of planned change. Cost analysis was shown to be fundamental to the three educational planning

techniques of cost-benefit analysis, cost-effectiveness analysis, and PPBS. The current utility of the three planning techniques was, however, questioned.

CHAPTER III

DESIGN OF THE STUDY

This chapter provides a general outline of the study and a description of the population. The first section develops the methodological framework used in the study. This framework was conceptualized in terms of three dimensions: (1) the cost structure, (2) the program structure, and (3) the analysis aspect. The second section contains the delineation of the study and the third section contains a description of the population.

I. THE METHODOLOGICAL FRAMEWORK

In general terms, this study integrated unit cost methodology with a program concept of school activities. The methodological framework consisted of two major components: the cost structure and the program structure. The "programs" referred to involved twenty-three curricular programs and five non-curricular programs.

A "crosswalk" approach which served as a transitional stage between a conventional budget format and a program budget format was utilized in moving from the function-object classification to a program accounting system. Duke (1970:188) described the advantage of this approach by stating:

> This two-dimensional approach to budget reporting provides more meaningful information with respect to the allocation of resources than a single dimension function-object approach. A function-object based

> conventional budget format does not differentiate among the various curricular purposes for which funds are allocated.

The overall design can be conceptually divided into three phases:

(1) the conventional function-object classification phase

(2) the program-orientation classification phase

(3) the integrated cost-analysis phase.

Cost-Structure: Classification by Function-Object

The basic cost-structure of this study was adapted from a function-object classification system of expenditures developed by Reason and White (1966:27-35) who referred to their system as a "functional-character-object" classification system. They used the term "functional" to refer to the kind of educational activity involved; "character", to refer to the nature of payment as a fiscal transaction and "object", to refer to the specific item purchased. In this study the term "function-object" was used to encompass the same idea.

Figure 1 summarized the function-object classification system of the expenditures used in this study.

100 Administration. Reason and White defined Administration as:

> . . . those activities which have as their general purpose the regulation and control of affairs of a school district that are system-wide and not confined to one school subject, or a narrow phase of school activity (1966:31).

In this study three distinct types of administrative units were contained in the population: (1) one rural larger school unit, (2) five comprehensive high school boards, and (3) four urban school boards.

Expenditure Accounts

Series 100 ADMINISTRATION

- 110 Salaries
  - (a) Academic
  - (b) Support
- 120 Expenses

200 INSTRUCTION

- 210 Salaries
- 211 Teachers
- 212 Administrators
- 213 Other Instructional Staff
  - (a) Library
  - (b) Audio-Visual and Television
  - (c) Guidance
  - (d) Other
    - (1) Internal Substitution
    - (2) Substitute Teachers
- 215 Clerical and Business Support Staff
- 216 A.V. and T.V. Technicians
- 230 Library Equipment and Supplies
- 235 Audio-visual Equipment and Supplies
- 236 E.T.V. Equipment and Supply
- 240 Instructional Equipment and Supplies (Curriculum)
- 242 General Classroom Equipment, Supplies and Textbooks
- 250 Other
- 251 Computer Centre

300 ATTENDANCE SERVICES

- 310 Salaries
- 320 Expenses

FIGURE 1

FUNCTION-OBJECT CLASSIFICATION OF EXPENDITURES

Expenditure Accounts

Series 400 HEALTH SERVICES

- 410 Salaries
- 420 Expenses

500 PUPIL TRANSPORTATION

- 510 Salaries
- 520 Other

600 PLANT OPERATION

- 610 Salaries
- 640 Utilities
  - (a) Fuel
  - (b) Light and Power
  - (c) Telephones
  - (d) Water
- 650 Supplies
  - (a) Custodial
  - (b) Other Expenses
- 651 Total Energy Supply and Contract

700 PLANT MAINTENANCE

- 710 Salaries
- 720 Repair and Replacement of General Equipment and Furniture
- 740 Other

800 FIXED CHARGES

900 FOOD SERVICES

- 910 Salaries
- 920 Other

FIGURE 1 (Continued)

Expenditure Accounts		
Series	1000	STUDENT BODY ACTIVITIES
	1100	COMMUNITY SERVICES
	1200	CAPITAL OUTLAY
	1300	DEBT SERVICE FROM CURRENT FUNDS
	1400	OUTGOING TRANSFER ACCOUNTS

FIGURE 1 (Concluded)

200 Instruction. Expenditures related to activities dealing directly with or aiding the teaching of students, or improving the quality of teaching, were included in the 200 Instruction series.

The salaries of certified personnel, or prorated proportions of these salaries were accounted according to three general functions. These were: (1) the teaching of subjects to students, (2) the service function of directly assisting teachers to instruct subjects to students, and (3) the supervisory function relating to the supervision or direction of students rather than to their teaching.

Those personnel involved in the teaching of subjects to students included the classroom teacher, resident-administrators, department heads, and resident consultants or supervisors of instruction.

Service function personnel who did not teach subjects to students but provided service to facilitate teaching were subcategorized into: (1) librarians, (2) audio-visual personnel, (3) guidance personnel, and (4) television personnel.

Supervision function personnel performed either wholly or in part, those duties pertaining to the supervision or direction of students, or substitute duties. This classification included study hall supervision, home room supervision, administrative supervision, library supervision, and internal substitution expense. A count of students involved was not maintained for any of these activities.

The salaries of resident secretaries, teacher aides, clerical assistants and business personnel were aggregated under "Clerical and Business Support Staff".

"Library Equipment and Supplies" included such expenditures as library books, reference books, book binding, periodicals, and instructional-material-centre supplies and equipment. As a general guideline, materials or equipment that were handled through the school library were placed in this category.

"Audio-Visual Equipment and Supplies" included materials used in the instructional program, such as films, filmstrips, recordings, exhibits, charts. The repair of audio-visual equipment was also included.

"Instructional Equipment and Supplies" included expenditures for supplies, equipment or materials which could be directly charged against a curricular program in the study. "General Classroom Equipment Supplies, and Textbooks", included the remainder of the instructional equipment and supplies that were not assigned to a specific curricular program.

The remaining "Other" category included computer data processing service, guidance materials, travel expenses, and the costs of curriculum and professional development.

300 Attendance Services. Expenditures for those activities which had as their primary purpose the promotion and improvement of students' attendance at school, through enforcement of compulsory attendance laws and other practices, were recorded in this section.

Attendance services were not conducted as a separate function, but were an integrated activity of administrators, teachers, and clerical staff in the population. Therefore, the cost of the attendance function could not be isolated

and was included generally within the salary costs of those named personnel and in the "Other" category for supplies.

400 Health Services for Public Schools. Health services for students were carried on in the population schools by Public Health Nurses whose salaries were not charged to the schools. However, supply costs for health services were included under the "Other" classification in the 200 Instruction category.

500 Transportation. Student transportation services purpose conveyed students to and from school activities, between home and school, or on trips for curricular or extra-curricular activities.

Only one school in the population was involved directly in the transportation of students between school and home. The other ten comprehensives had the transportation costs of students paid by other school boards who had contracted the education of some or all of their Division IV students to a comprehensive school within the population.

The prorated cost of transportation of students attending the one comprehensive high school was included in Series 500 Transportation. This cost in the other ten schools was accounted as an Ancillary expenditure.

600 Operation Of Plant. Plant operations consisted of the housekeeping activities required to operate the physical plant. It included cleaning, disinfecting, heating, lighting, communications, power, moving furniture, handling stores, caring for grounds, snow removal, and other activities which

were repeated regularly on a daily, weekly, monthly or seasonal basis.

In this study salaries were aggregated directly by school as were utilities, heat, and caretaking supplies.

Two of the population schools had total energy plants which provided all light and power by generating electricity from natural gas powered units. The utility costs, and maintenance and supply costs for this section were recorded under the heading "Total Energy Operation".

700 Maintenance of Plant. This consisted of activities concerned with keeping the grounds, buildings, and equipment in original condition of completeness or efficiency, either through repairs or by replacement of property. In this study, salaries for this classification were considered as resident costs. The category "Repair and Replacement of General Equipment and Furnishings", included such expenditure items as repairs to furniture and equipment, and caretakers' tools, snow removal costs and minor school building renovations.

800 Fixed Charges. These charges were expenditures of a generally recurrent nature which were not readily charged to other expenditure accounts. Five major subcategories were included in this series: (1) school district contributions to certificated and uncertificated employee benefits, (2) insurance and judgements, (3) rental of land and buildings, (4) interest on current loans, and (5) other fixed charges.

School district contributions to employee benefits included payment of Canada Pension Plan premiums for teachers and other employees. Unemployment Insurance premiums for non-teaching employees, Workmen's Compensation premiums and the payment of retirement premiums other than the Canada Pension Plan premiums, included in agreements with non-teacher employees, were included in this category.

Insurance and Judgements included school property insurance, employee and liability insurance. Generally these expenditures were aggregated into a single base policy with one annual premium, and a detailed expenditure for each type of insurance was not available. Fidelity bond premiums for non-resident Administration personnel, resident administrators, and clerical assistants were also aggregated into a single premium payment.

Judgements were defined as expenditures from current funds for all legal judgements against the school district, not covered by currently held liability insurance. Only amounts paid as the result of court decisions were recorded here. No expenditures were made by the population schools during the year 1970-1971 in this category.

Rental of lands and buildings included two sections, that related to instructional purposes, and that related to non-instructional purposes. No rental payments related to instructional purposes were made during the period of this study.

Interest on current loans included interest on money borrowed and repaid during the same fiscal year. Banking charges, and currency exchange were

aggregated in this section under the general heading of bank charges.

Other fixed charges considered in this study were local improvement taxes relative to the population schools.

900 Food Services. This category included prorated salaries of full-time non-certificated personnel engaged in the preparation and service of regular meals, and cafetorium services. In this study only food services salaries were included. Supply costs for this category were directly related to food sales, and did not represent a program expenditure for the comprehensive schools.

1000 Student Body Activities. Student body activities were managed and operated by the student body under the guidance and direction of adults, and were not part of the regular instructional program. Only those expenditures made by the administrative body to the School Student Council, in the form of grants, were recorded in this series. No data relative to the dissemination of these funds by the students councils were recorded.

1100 Community Services. Those services provided by the school district for the community as a whole, or a segment of the community, excluding public school and adult education programs operated by the school district, fell under the category of community services.

No expenditure data were available for this section in the eleven comprehensive high schools although each school provided services to the community in the form of rental of school facilities, at regular or reduced rates.

No separate accounting records were maintained within the comprehensives to record the exact cost of community services in terms of plant operating costs or the prorated costs of certificated, and non-certificated personnel. Rental fees, which were somewhat arbitrarily set, were assumed to cover the cost of using school building for cummunity services.

1200 Capital Outlay. Expenditures recorded in this category were expenditures for: (1) repairs to building structures, including changes of partitions, roof structures, or walls, (2) initial installation and extension of services systems and other existing built-in equipment, (3) any additions to the plant, and (4) expenditures for initial or additional equipment, which were paid out of current revenue during the school year.

1300 Debt Service From Current Funds. Debt service consisted of expenditures for the retirement of debt, and related interest. Principal and interest of current loans (money borrowed and paid back during the same fiscal year) which was recorded under 800 Fixed Charges.

Recorded in this category were the building debenture principal and interest payment made by the school district. In one school the administrative school board did not make debt service payments, the payments being made by the school districts which, by agreement, accepted responsibility for the local cost of school construction. The administrating school board had only current operating responsibilities in the school.

1400 Outgoing Transfer Accounts. Expenditures made to other school districts or other administrative units were categorized as "Outgoing Transfer Accounts".

Items recorded within this classification, in this study, covered the tuition fees of students within the boundary area of a comprehensive school, who opted to attend a high school with programs conducted in the French language. Two of the population comprehensives made transfer payments to elementary Roman Catholic School districts, which offered Division III grade IX and Division IV programs. This payment was a transfer of revenue obtained through taxation, and paid to a school administration which did not yet have taxation privileges. As such, the transfer payment did not represent an operational expenditure for the two schools involved, however, the amount of the transfer payment was recorded, but not included as an operational expense for the schools involved.

Program Structure: Classification of Programs

The term program as throughout this study was defined as "a group of inputs enabling the provision of curricular or non-curricular activities which may or may not be related to stated objectives" (Knezevich, 1970:7).

Barro's (1969:30-43) three dimensional classification of school programs was utilized in this study. He divided students on the basis of subject, grade, and type of student.

In this study the subject was the primary unit selected for costing

purposes. These subjects were then aggregated into curricular programs.

The single grade dimension was used throughout the analysis for direct instructional cost. In allocating indirect instructional costs grade ranges were used, and costing was charged to school-wide curricular areas rather than grade curricular areas. Grades were not considered to be exclusive subject determinants, for students were permitted to select subjects at any grade level in Division IV. This was stated in the Division IV Program Policies, of the Saskatchewan Department of Education:

> . . . it would be possible for an interested and able (Grade X) student to select electives at a higher level (Grade XI or XII) if the matter of prerequisites does not create an obstacle (1970:2).
>
> Grade XI or XII students may earn credits towards grade standing or graduation by taking subjects at an earlier or higher grade level, e.g. to take Grade X or XI subjects while enrolled in Grade XI or to take Grade X or XI subjects while enrolled in Grade XII provided prerequisites do not prove to be an obstacle (1970:3).

Barro's "type of student dimension" applied to two types of Division IV students, general program and Vocational A program students in this this study. Students in a general program were defined as those students enrolled in a comprehensive school who were attempting to obtain a grade level or graduation. No tracks or streams of programs were operable within grades.

> The rigidity of tracks or streams such as University Preparatory or Technical Institute Preparatory Programs was eliminated (in the Division IV Program). Students are provided an opportunity for some specialization or to study some area in depth without locking the student into a particular stream or track (Saskatchewan Department of Education, 1970:1).

Students in the general program were governed by four regulations

relative to subject selection and attaining standing:

1. A minimum of seven subject credits are required to attain standing in each of Grades X, XI, and XII. Five of the minimum number of credits must be obtained at that grade level.

2. A minimum cumulative total of twenty-one (21) subject credits must be earned at the combined Grade X, XI, and XII level to obtain standing for Grade XII graduation.

3. English is a required compulsory subject in Grade X, XI, and XII and is rated as a two (2) credit course since it will include both composition and literature.

4. Grade X students have in addition to English three compulsory subjects, mathematics (1 credit), science (1 credit), and social studies (1 credit) (Saskatchewan Department of Education, 1970:2).

Vocational A students were enrolled in terminal courses of one year or two year duration. Vocational A, Year I and Year II courses had a program consisting entirely of modified courses designed to meet the needs of students. Included in the Vocational A program was the occupational program offered to North American Indian students in one of the population comprehensives.

Curricular Programs

Curricular programs were sub-classified on a three dimensional basis, namely: by subject, by Division and grade, and by type of student.

Subject Dimension. All subjects offered within the population comprehensive schools were listed. This list was divided into twenty-three curricular programs. The programs were, in turn, classified into two curricular areas, academic and vocational-technical. Figure 2 provides a summary of the twenty-three curricular programs sub-divided into academic and vocational-technical

ACADEMIC	VOCATIONAL-TECHNICAL
Christian Ethics	Agriculture
English	Business Education
Fine Arts	Commercial Cooking
Home Economics	Cosmetology
Mathematics	Drafting
Modern Languages	Electrical
Physical Education	General
Science	Mechanical
Social Studies	Media
	Structural
	Technology
	Vocational
	Driver Education
	Guidance

FIGURE 2

CURRICULAR PROGRAMS BY GENERAL PROGRAM AREAS

OFFERED IN THE COMPREHENSIVE HIGH SCHOOLS

areas. Driver education and classroom guidance programs were offered in one comprehensive. These programs were assigned arbitrarily to the vocational-technical area for unit costing purposes.

In dealing with combined courses, e.g. Ukrainian 20/30, the exact number of students from each grade was determined and included within the respective grade-subject categories.

The Division and Grade Dimension. This study was designed to provide cost data for two divisions and five grade levels: Division III, Grades VIII and IX, and Division IV, Grades X, XI, and XII depending upon the programs offered within the eleven comprehensive schools.

Type of Pupil Dimension. This study provided five separate student program routes. These were:

(1) General Division III

(2) General Division IV

(3) Vocational Year 1

(4) Vocational Year II

(5) Division III Upgrading

Standard programs with limited course options were provided for general Division III students. Vocational Year 1, and Vocational Year II, and Division III Upgrading routes provided modified classes with no options. The General Division IV program contained no streaming or tracks; therefore, attempts to cost program routes in this area were not possible.

Non-Curricular Programs

Seven non-curricular programs, defined as a group of student service activities which did not involve formal subject instruction, were provided in the population schools. These were:

(1) General Administration

(2) Guidance

(3) Library

(4) Audio-Visual

(5) Television

(6) Student Supervision

(7) Auxiliary Service Function Activities

"General Administration" included all resident program supporting or facilitating activities related to curricular and non-curricular programs. "Guidance" included all activities associated with student counselling services, "Library", "Audio-Visual" and "Television" included all expenditures for the three areas of instructional media. "Student Supervision" included: home room supervision, study room supervision and library supervision. "Auxiliary Service Function Activities" were those activities conducted for the development of students outside of curricular programs and the non-curricular programs.

Cost Analysis

The cost analysis phase provided five general sets of data:

(1) direct and indirect instruction expenditure data

(2) implementary expenditure data

(3) auxiliary data

(4) capital cost data

(5) ancillary data

The five sets of data were then combined to produce two unit costs, namely: (1) total educational unit costs, and (2) complete educational unit costs. These were derived by the general formulae:

$$\text{Total Educational UNIT COST} = \frac{\text{Direct Expenditure + Indirect Expenditure + Implementary Expenditure}}{\text{Appropriate Unit of Auxiliary Data}}$$

$$\text{Complete Educational UNIT COST} = \frac{\text{Direct Expenditure + Indirect Expenditure + Implementary Expenditure + Proportional Capital Expenditure + Ancillary Expenditure}}{\text{Appropriate Unit of Auxiliary Data}}$$

The major components of this cost analysis study were provided in Figure 1. A brief description of the components follows:

Total Educational Unit Costs: Numerator of the Ratio. The numerator of the Total Educational Unit Cost ratio was the sum of the direct, indirect and implementary expenditures, or any combination of the three, depending on the unit of output desired. Direct expenditures were those associated with the instruction of subjects to students. Indirect expenditures pertained to teacher salary input for specific preparation activities, instructional supplies and

equipment allocated to curricular programs, and curriculum oriented support staff. Implementary expenditures were categorized as resident and non-resident expenditures. Resident implementary expenditures were subdivided into general implementary cost and plant operation cost. Resident general implementary cost included: (1) the service function programs operable in the school requiring teacher salary input, (2) the clerical and business staff and food service staff salaries, (3) the supplies and equipment required for service function activities, and (4) the cost of substitutes. Resident plant operation cost included all plant operation and plant maintenance cost for the school year 1970-1971. Non-resident implementary cost included: central administration, pupil transportation, fixed charges, student body activities, debt service, capital expenditure from current funds and outgoing transfer accounts.

Total Educational Unit Cost: Selection of the Denominator. The denominator of the ratio was composed of auxiliary data related to the output unit required. The major output unit was the student. Two types of "per student" units were utilized in the study, "per student-enrolled", which referred to the aggregated grade or school enrollment and "per student-course" which referred to the total of all students enrolled within a course or curricular program. For example, there were 1,632 students enrolled in Comprehensive G and 50 students enrolled in the media program.

Other auxiliary data used in the study pertained to the teaching staffs of the population comprehensives. Teacher qualifications, experience, salary,

and age were analyzed in relation to the population comprehensives and the curricular programs.

Figure 3 illustrates the computational procedures involved in the total educational unit cost analysis. Matched direct and indirect costs were added to prorated implementary costs to provide a total cost figure as the dividend. The divisor, consisting of a selected auxiliary unit such as students enrolled, enabled the computation of the quotient as a total educational unit cost.

Complete Educational Unit Cost. This unit cost was computed by adding the prorated yearly capital building and site "use" cost (minus the debt service principal payment), the equipment "use" cost and the aggregated ancillary costs to the numerator of the "Total Educational Unit Cost". This was divided by the appropriate unit of auxiliary data to produce a "Complete Educational Unit Cost".

The following unit costs pertaining to the comprehensive high schools were reported in this study:

(1) Direct Instructional Costs

- per student-course-enrolment
- per student-course by curricular program
- per student-course-equivalent by curricular programs
- per student by grade
- per student by division

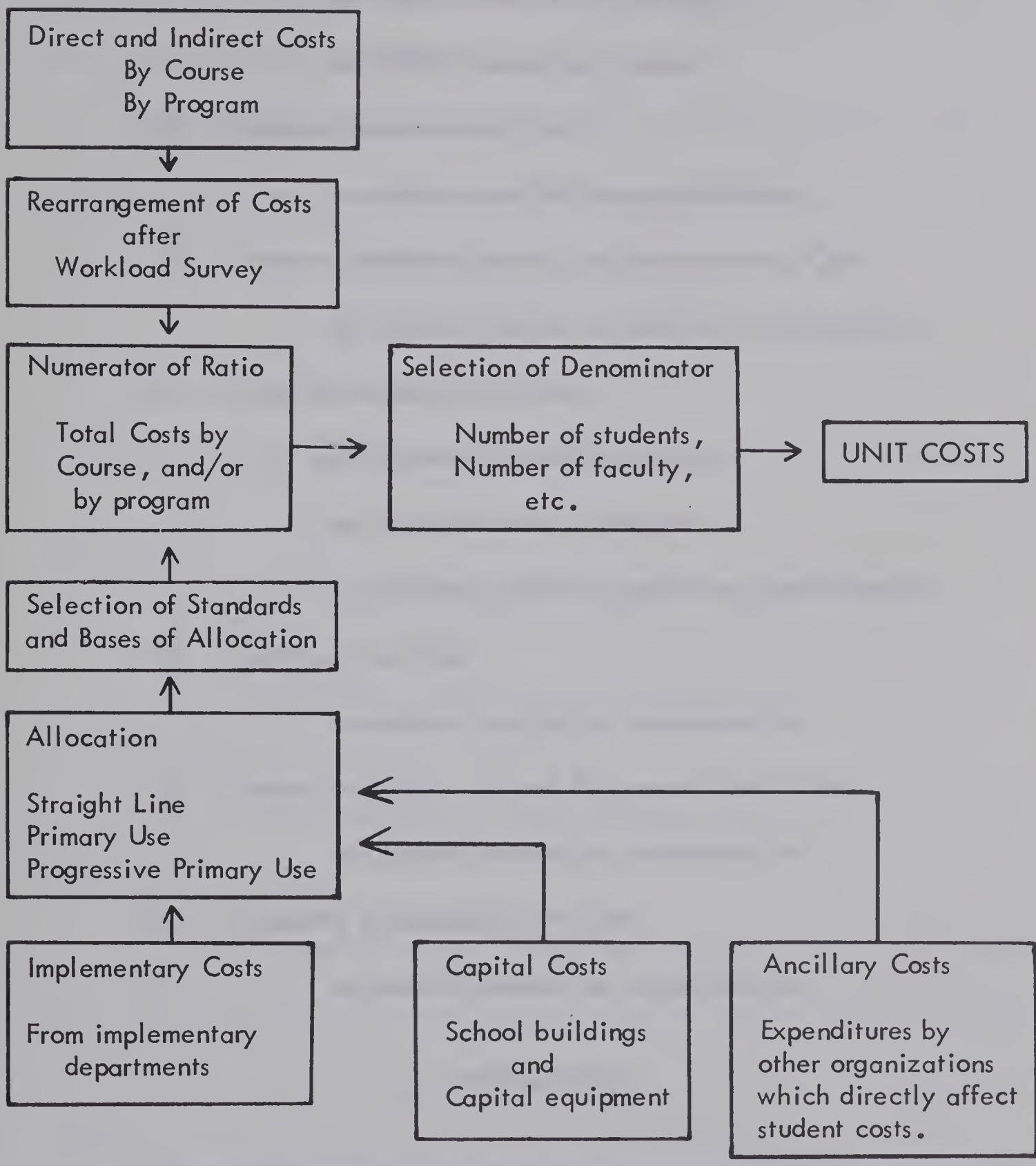


FIGURE 3

A UNIT COST ANALYSIS METHODOLOGY



(2) Resident Indirect Instructional Costs

- per student-enrolled by program
- per student-course by program

(3) Resident Implementary Costs

- per student enrolled in comprehensive

(4) Combined Resident Indirect and Implementary Costs

- per student enrolled in grade and comprehensive

(5) Total Educational Unit Costs

- per student-enrolled by program
- per student-course by program
- per student enrolled by grade and comprehensive

(6) Auxiliary Unit Costs

- per student enrolled by comprehensive

(7) Capital Building, Site and Equipment "Use" Costs

- per student enrolled by comprehensive

(8) Complete Educational Unit Costs

- per student enrolled by comprehensive

II. POPULATION

The eleven comprehensive high schools which made up the population of this study were identified by the Saskatchewan Department of Education and the Saskatchewan School Trustees Association. These population schools were

constructed and equipped completely or partially under the provisions of the Technical Vocational Training Act and provided a complete academic and vocational-technical Division IV program.

Tables XXXI to XXXV in Appendix D provide a description of the population schools with respect to pupil enrollments and number of teachers.

III. DELINEATION OF THE STUDY

This section delineates the study under three separate headings. These deal with the assumptions, delimitations and limitations of the study.

Assumptions

Five general assumptions were made in the conduct of this study:

(1) Records from which the required cost data and enrollment data were extracted were complete and accurate.

(2) Data extracted from records was interpreted to mirror the intent of the data as recorded.

(3) Projections of annual expenditures based on expenditures made over a period of less than a year were assumed to be close to actual expenditures.

(4) Bases and standards utilized for the proration of implementary, capital and auxiliary costs were assumed to be accurate.

(5) Differences in unit cost reflected differences only in costs, rather than any indication of differences in quality.

Delimitations

This study was delimited to:

(1) expenditures made for the operation of the eleven comprehensive high schools for the school year July 1, 1970 to June 30, 1971

(2) regular full time or full time equivalent day students

(3) all costs charged against regular day program

(4) the assigned activities of certified staff as defined by the master time table in each comprehensive

(5) the reporting of descriptive data, indicating cost differences

(6) ancillary expenditures charged against the total school enrollment

(7) capital building, site and equipment prorated "use" costs

(8) all expenditures, for food service supply costs and non-operational transfer payments

Limitations

Additional limitations relevant to this study are:

(1) the problem of interpreting individual comprehensive school master time tables in a uniform manner

(2) the problem of interpreting the course numbers and credit values of the courses offered within the comprehensives

(3) the difficulty of interpreting expenditure data in a uniform manner throughout the population

(4) the accuracy of determining capital building, site and equipment "use" costs, based upon average general life expectancy.

The findings presented in this study were descriptive, unit costs presented in various degrees of aggregation. Differences were noted but not investigated. All unit costs reflected the priority dimensions operable during the 1970-1971 school year within the population comprehensives. The analysis of the differences noted provide bases for advancing new hypotheses.

IV. SUMMARY OF CHAPTER III

This chapter presented the three phases of the methodological framework of this study. The conventional function-object classification phase was adapted from the Reason and White (1966:27) expenditure classification system. The second phase, the program-orientation classification phase, included the identification of courses instructed by curricular program, curricular area and grade, and type of pupil dimension. The third phase, the integrated cost-analysis phase, outlined the methodological processes relative to the determination of direct and indirect instructional unit costs, resident and non-resident implementary unit costs, total educational unit costs, and complete educational unit costs.

CHAPTER IV

RESEARCH PROCEDURES

The population used in this study was eleven comprehensive high schools in the Province of Saskatchewan administered by ten school administrative boards. To obtain the necessary data for the study required interaction at three educational levels: provincial, school board, and school.

This chapter outlines the procedures used to obtain data throughout the study in the following stages: (1) preliminary pre data gathering activities, (2) a description of the sources of data, (3) the types of data sought, and (4) a résumé of the data collection methods used. The fifth section of the chapter describes the methods used to treat the data.

1. PRELIMINARY ACTIVITIES

Authorization of the Study

This study was initiated through discussions with the Saskatchewan School Trustees Association, the Saskatchewan Department of Education and the Saskatchewan Teachers' Federation, and culminated in five preliminary pre data gathering activities to obtain authorization for the study and to ensure the co-operation of the study population. The five activities and their results were as follows:

(1) to obtain the permission of the Department of Education to conduct the study (Appendix A)

(2) to obtain funding for the study (Appendix A)

(3) to obtain study authorization from the Saskatchewan School Trustees Association (Appendix A)

(4) to obtain permission from the school boards of the eleven comprehensive high schools for the release of pertinent data (Appendix A)

(5) to obtain the co-operation of the professional staff members of the eleven comprehensive high schools by recommendation of the Saskatchewan Teachers' Federation (Appendix A)

II. DATA SOURCES

Five general kinds of data, namely, program data, cost data, auxiliary data, ancillary data, and capita data, were collected from ten data sources:

(1) School program documents and student registration forms

(2) Faculty workload survey

(3) 1970 fiscal year school audit

(4) 1971 school year proposed and accepted submitted budgets

(5) General ledgers

(6) Costed inventories and capital equipment submission forms

(7) Capital equipment ledgers

(8) Regularly compiled system data

(9) Interviews and consultation with appropriate instructional and support personnel

(10) Administrative officials of other school boards which transported students to the comprehensive schools.

School Program Documents and Student Registration Forms

Due to the revision of the Division IV program that commenced in July, 1970, the Saskatchewan Department of Education did not have a complete list of courses offered in the school of the population. A letter for M.L. Riederer in reply to a request for a listing of course offerings is contained in Appendix B.

The diversity of programs offered in the comprehensive high schools resulted from the Department of Education's policy to maintain flexible courses of study and curriculum guides.

> Since provincial courses are to be used in various sizes and types of schools and with students of varying interests, aptitudes, abilities and aspirations and by teachers with varying academic backgrounds, training and teaching experience, they (courses of study and curriculum guides) cannot be used most effectively in their original form as they come from committee. It is assumed the courses will be adapted to varying needs of students and teaching styles (Department of Education (Sask.), 1970:17).

Besides this general statement of policy, regarding the Division IV program, structures were established to affect maximum freedom within the general framework of courses of study by establishing three course revision procedures:

> 1. The policy has been for major deviations to be sanctioned by the administration of the school and school system, and submitted to the Department of Education for approval. Courses so approved may be given the same status as provincially developed courses (Department of Education (Sask.), 1970:17).

2. Current departmental policy permits schools and school systems to make major variations in provincial courses to meet the special needs of student groups. For example, modified courses in basic subjects. . . have been developed and offered as alternative courses to students who are seeking Grade XII graduation but not university admission (Department of Education (Sask.), 1970:17-18).

3. School systems have been permitted to develop special courses in subject fields where new courses have not yet been developed such as physical education and drama or in vocational areas where there are special needs (Department of Education (Sask.), 1970:18).

To determine the individual programs in each of the population schools the principals were requested to submit a list of the courses to be offered in Semester I and II of the 1970-1971 year. Two types of lists were submitted, program documents and/or student registration forms. (Appendix B).

Faculty Workload Survey

Appendix C contains examples of forms used to obtain data relative to the resident professional staff within each of the comprehensive high schools. These forms collected six types of data:

(1) staff demographic data (age, sex, salary class, salary, experience, and assigned role)

(2) courses instructed (course name, number, grade level, instruction time, class section, length of course, and method of instruction)

(3) general preparation time

(4) specific preparation time and function

(5) supervisional time and function

(6) service function and time allocation

Ten of the eleven schools' programs were structured on a semester basis, requiring the completion of these forms in each semester.

1970 Fiscal Year School Audit

All schools jurisdictions in the Province of Saskatchewan were required to submit an annual Auditor's Report and Financial Statement to the Saskatchewan Department of Education. This document was completed by the auditors on a standard prescribed form.

This document was used for general explanatory purposes and to obtain data which was not explicit in general ledgers concerning the expenditures during the period of July 1, 1970 to December 31, 1970.

1971 Preliminary and Final Budgets

Each school jurisdiction was required by the Saskatchewan Department of Education to submit for approval a preliminary budget on a standardized accounting system for the subsequent fiscal year. Following consultation and negotiation the preliminary budget or budgets was ratified and became the final budget of the school jurisdiction for the forthcoming fiscal year.

In ten of the eleven schools in the population the final budget was utilized for proration purposes to determine the expenditures from January 1, 1971 to June 30, 1971. The preliminary budget was used in the eleventh school system, which did not complete a teachers' salary agreement until June, 1971.

General Ledgers

In all population schools the general ledger was used to obtain expenditure data from the period July 1, 1970 to December 31, 1970 and January 1, 1971 to April 15, 1971.

Expenditure data in the ledger were of two basic types, an accrual entry system or a line-object recording system. The expenditure data was collected from the ledgers by adaptation of the ledger systems to the data required.

Cost Inventories and Capital Equipment Submission Forms

Capital equipment data were obtained from two primary sources, costed inventories, where these records were available, and copies of capital equipment submission forms, required by the Saskatchewan Department of Education. Where possible, capital expenditures were broken into functional classifications. Where this information was unobtainable, a net total capital equipment expenditure figure was used.

Capital Building Ledgers

The capital expenditure data relative to the building and site were obtained from capital building ledgers where these forms were available. Other existing documents stating the capital value of the building and site were accepted where capital building ledgers were not available.

Regularly Compiled System Data

Enrollment data, number of teachers employed, the roles of professional staff members, and instructional and supervision timetables were obtained from appropriate school administration officials. Copies of Form 42, submitted by school jurisdictions to the Department in September each year, and amended in January and June, provided a record of the professional teaching staff, assignment, certificate and certificate number, present salary, salary classification and experience. This was used as a checking document for faculty workload survey information.

Interviews and Consultation with Appropriate Instructional and Support Personnel

Over three hundred structured and unstructured interviews were conducted over the course of the study. These interviews were conducted with the following: central office professional personnel, board secretary-treasures and their staffs, school board members and chairmen, resident school administrators, resident certificated staff members, clerical staff and teachers aides, technicians, and physical plant engineers and custodians. In addition there were six consultations with the Saskatchewan School Trustees Association officials, five consultations with Department of Education personnel and two consultations with Saskatchewan Teachers' Federation supervisory personnel.

Administrative Officials of Other School Boards

Administrative officials of other school boards who made expenditures for the purpose of transporting students enrolled in comprehensive schools were interviewed to determine the transportation costs involved.

III. TYPES OF DATA SOUGHT

Seven types of cost data were sought in this study: direct costs, resident indirect costs, resident implementary costs, non-resident costs, capital costs, auxiliary cost and ancillary cost data. The following comments relate to the type of cost and the type of data sought.

Direct Costs

The direct costs were obtained from the faculty workload survey. The survey forms were designed to permit completion by teacher or researcher, utilizing existing school records.

Four methods were used to collect direct cost data: individual teacher interview, curricular program department meetings of teachers, general staff meetings of teachers, and from school documents. The method of data collection was determined by the resident administrators of the individual comprehensive high schools.

Resident Indirect Costs

Costs other than formally-scheduled teaching classes were obtained

from the faculty workload survey under three classifications: general preparation time, specific preparation time, and supervisional time. Supply costs, which could be assigned to a subject area, were obtained from school account records or the general ledgers of the central school board.

Resident Implementary Costs

Implementary costs were obtained in part from the faculty workload survey. These were service function costs, auxiliary service function costs, and supervisional cost. Support staff payments for teacher aides, secretaries, custodians, and technicians were obtained from payroll records or the general ledger. Other resident implementary costs such as utilities, caretaking supplies, general and service function supplies were obtained from the general ledger.

Non-Resident Implementary Costs

All "out of school" costs were obtained from the general ledger, the audited 1970 statement and expenditure records. These included the cost of the central administration, fixed charges, debt service, capital outlay, and out-going transfer accounts.

Capital Costs

Capital costs of sites and improvements, buildings and equipment were obtained from costed inventories, capital equipment submission forms and from capital building ledgers. The detail relative to the cost per square foot

of area was not available. As a result the total building contracted costs were used. Data on equipment costs were categorized into specific subject areas. Where these data were unavailable, recourse was made to records which designated equipment cost on the basis of academic, joint use, technical vocational, or total equipment costs.

Auxiliary Data

Auxiliary data came from four main sources. Subject enrollments were obtained from the faculty workload survey. Teacher qualifications and demographic data were obtained from the faculty workload survey and Form 42 records. School and grade enrollments, timetables, staff lists, and assigned staff functions were obtained from the population schools. Information relative to service function activities was obtained from resident administrators.

Enrollment figures for both grade and subject were taken as of September 30, 1970 and February 28, 1971 for the ten schools operating on a semester basis. Enrollment for the non-semester school was taken as of October 31, 1970. Subject enrollments were taken at approximately the same time in all schools.

Enrollment data varied throughout the year. The general trend being a reduction at the end of the first month in each semester, followed by a slight reduction throughout the remainder of the semester. The dates of data collection eliminated as many of the enrollment changes as possible.

Ancillary Data

Information relative to expenditures by other school boards for students attending the population schools was obtained through consultation with administrative personnel of the school jurisdiction involved. Transportation costs for students was the only information required. The number of transported students, the cost per mile including operation and maintenance cost, was aggregated to obtain a transportation cost.

Capital Cost Data

Capital cost data included the value of the comprehensive building, the comprehensive site and the value of capital equipment within the comprehensive. Capital equipment data were required in each of the following areas: curricular program, general equipment, plant operation equipment and maintenance equipment.

Capital equipment cost records were not available in a standardized format throughout the population. As a result, the data obtained for each comprehensive varied in relation to the capital equipment accounting procedures of the school. The total value of capital equipment was the only common data existing in all comprehensives, and as a result only this figure could be used in subsequent analysis.

IV. DATA COLLECTION

The collection of data was conducted by personal visits, in four

stages over a period of eighteen weeks throughout the 1970-1971 school year.

(1) The resident and non-resident administrative staff of the population comprehensive schools were oriented and the listing of courses offered in each school was compiled.

(2) The Faculty Workload Survey for Semester I in the two-semester organized comprehensives and the non-semester organized school was administered.

(3) The Faculty Workload Survey for Semester II was administered and expenditure data were secured.

(4) The collection of cost data in schools, where salary agreements or final budgets were not approved took place after stage III was completed.

Three major factors complicated and delayed the collection of data for this study. These were the use of the fiscal year rather than school year for accounting procedures; a number of salary settlements for the years 1970 and 1971 were not completed at the time the faculty workload data were collected;and the delayed approval of preliminary budgets for the 1971 school year.

Methods of Collection

Stage 1. In addition to the orientation of administrative and school personnel regarding the study, data were collected relative to the general curricular program in the school, the listing of courses offered, and the location of consultative personnel in charge of cost and ancillary data sources.

Stage II. The Faculty Workload Survey data for Semester I were collected by the means considered most appropriate and least disruptive by the resident administrators. Where data were to be supplied directly by teachers an explanation of the study and an orientation to the necessary questionnaires was provided.

Information relative to the faculty workload survey was obtained directly from teachers in four of the population schools. All faculty workload survey data obtained were checked by means of the master timetable of the comprehensive, and Form 42.

In the remaining seven schools the faculty workload survey data were obtained by the researcher from the comprehensive high school master timetables, individual teacher's timetables, student-class registers, and Form 42. Resident administrators and teachers were consulted where additional information or interpretation was required. In one of these schools the teachers were asked to check the completed faculty workload surveys.

Salary data were available for only two of the eleven schools during Stage II data collection.

Stage III. The second Faculty Workload Survey was completed by the researcher in the ten comprehensive schools operating under a two-semester organization, using the same information sources identified in Stage II. In three comprehensives the certificated staff was requested to verify the completed faculty workload survey data. Teacher salary agreements had not been completed

for three comprehensive schools when Stage III data were collected, which made teacher salary information unavailable until a later date.

Cost and ancillary data for the period July 1, 1970 to December 31, 1970 and from January 1, 1971 to March 31, 1971 were collected from the appropriate sources determined during Stage I and Stage II. Collection of data were completed by means of consultation, researcher accounting, and resident and non-resident administrative personnel accounting. Data relative to the prorated cost expenditures for the period April 1, 1971 to June 1, 1971 were obtained through consultation with resident and non-resident administrative officials, utilizing the final approved comprehensive budgets for 1971.

Stage IV. Three comprehensive schools were revisited to collect the data unavailable during the Stage III data collection. Final approval of the 1971 operating budget could not be obtained until 1971 salary agreements were completed, and, therefore, the completion of data collection could not be effected until these processes were finalized.

In addition to the visits to the three schools during Stage IV, communication was maintained with all population schools by mail and telephone as further information or interpretation was required.

V. THE TREATMENT OF DATA

Six kinds of data output were required, namely: (1) direct instructional costs; (2) resident instructional costs; (3) resident implementary costs; (4) non-resident implementary costs; (5) capital building, site, and equipment

costs; and (6) ancillary costs.

Prior to the treatment of data, computer programs were developed to perform the computational procedures required. The major programs developed for direct instructional, indirect instructional, and implementary costs were:

(1) School Course Offering Program

(2) Direct Instructional Cost Program

(3) Specific Preparation Cost Program

(4) Service Function Cost Program

(5) Certificated Staff Demographic Feature Program

Fourteen additional minor computer programs were developed for cross-checking purposes, cost ordering purposes, cost categorizing, and accounting purposes.

All the computer programs developed were interrelated with the "School Course Offering Program" which provided a listing of all courses offered by curricular program, grade, curricular area, school and total population. This program was developed from the information on courses offered, obtained from resident administrators during Stage I of the collection of data.

Figure 4 illustrates the computer function in the completion of teacher costs. Faculty workload survey and course offering information were the two information sources which provided the six cost information outputs required.

Direct Instructional Costs

Direct instructional costs were obtained from the faculty workload

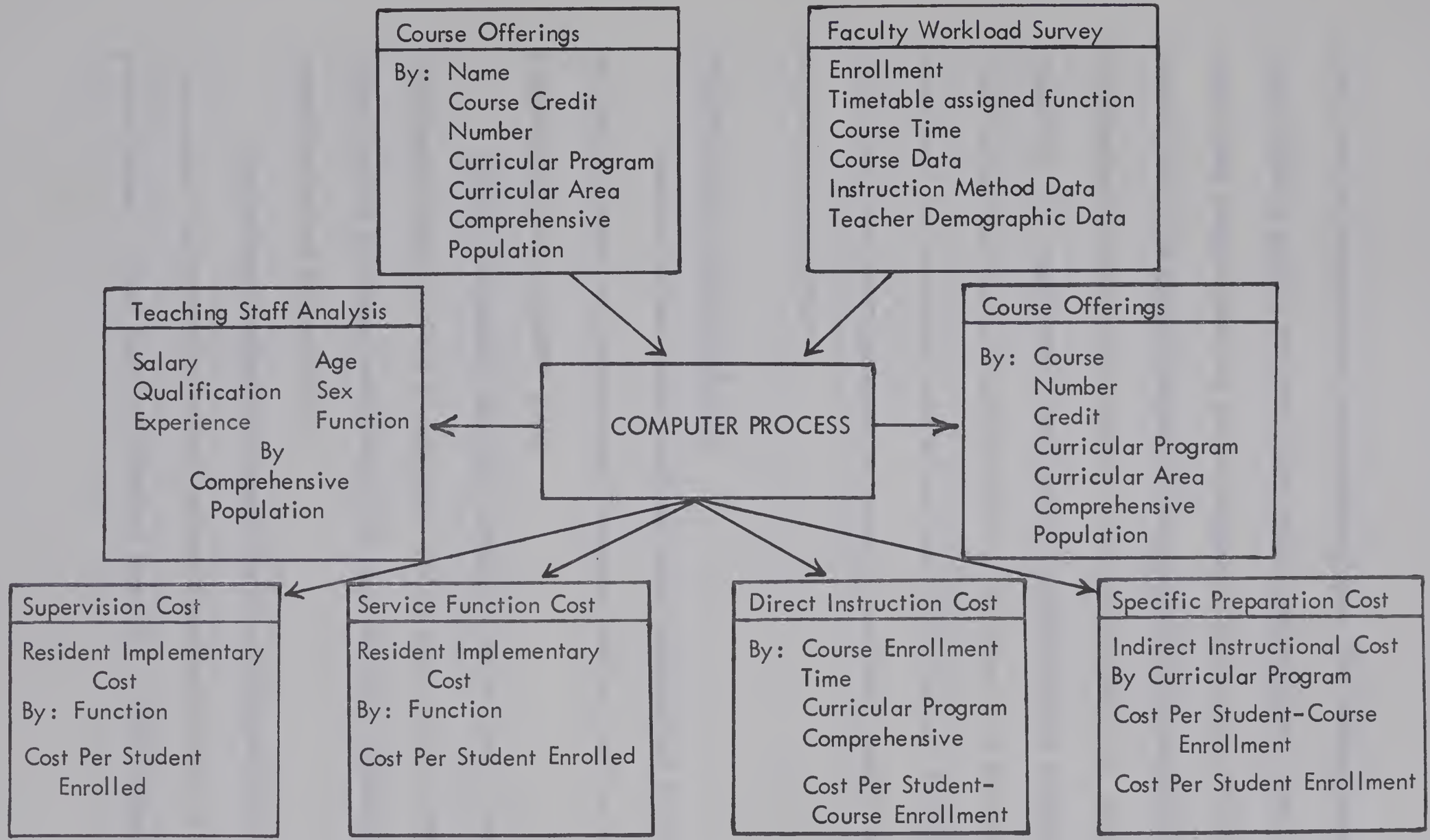


FIGURE 4

COMPUTER FUNCTION IN THE TREATMENT OF DATA



survey data and comprehensive course offering data. This information was computerized to produce the direct instructional data required. Direct instructional costs included the instruction costs of each course, and the prorated cost of the general preparation time assigned to the course instructor. Data obtained on direct costs included: course instructional cost, prorated general preparation cost, aggregated instructional and prorated general preparation cost, direct instructional cost per student enrolled in the course, and the direct instructional cost per student enrolled per credit in the course. The direct instructional costs were aggregated by course, by curricular program, by curricular area and by comprehensive.

Resident Indirect Instructional Costs

Resident indirect instructional costs were compiled from two sources; the specific preparation prorated costs of teachers' salaries, and the curricular program supply and equipment costs.

Specific preparation costs were obtained from the Specific Preparation Cost Program which provided the aggregate cost by course, the per student-course, and the per student-enrolled cost for each curricular program by comprehensive and by population.

Instructional equipment and supply costs were obtained from one of three sources: comprehensive records, subject department records, or the general ledger. Actual costs were obtained from July 1, 1970 to March 31,

1971, and prorated costs were obtained from April 1, 1971 to June 30, 1971.

The specific preparation cost and instructional equipment and supply costs were aggregated by curricular program to produce the indirect instructional costs of each curricular program, by student-course enrollment and by student-enrollment in each comprehensive.

Resident Implementary Costs

Resident implementary costs were subdivided into general implementary and plant implementary categories.

General implementary costs included all instructional costs which could not be allocated to specific curricular programs. Four categories of general implementary costs were established: general service function costs, auxiliary service function costs, supervision costs, and residual general implementary costs.

General Service Function Costs. These were the costs of five non-curricular programs operable in each comprehensive; library, guidance counselling, audio-visual, television, and administration. The prorated aggregated cost of teachers' salaries for each of these non-curricular programs was obtained from the Service Function Cost Program. This program produced the cost per student-enrolled for each of the general service function programs. Other costs included the salary costs of non-certified technicians, clerical and business support staff, and the supply costs for each of the service function programs.

The costs of teacher salary and other costs were aggregated to produce the total cost per student-enrolled for the service function non-curricular programs.

Auxiliary Service Function Costs. These were obtained from the Service Function Cost Program which provided the prorated cost of teacher salary for each auxiliary service function area in this category. The resulting aggregated costs were divided by the school enrollment to provide per student-enrolled costs for the auxiliary service function activities.

Supervision Costs. The cost of supervision activities was obtained from the Service Function Cost Program which provided the aggregated prorated teacher salary costs for each of the supervisory activities conducted in the population comprehensives. The aggregated supervision costs were then divided by the student enrollment of each comprehensive to obtain per student-enrolled costs.

Residual Implementary Costs. Costs in this category included all resident instructional costs which could not be allocated to the direct instructional, indirect instructional general service function, auxiliary service function or supervision function areas. Costs in this area were the residual remaining in series 215, clerical and business support staff; series 240, general classroom equipment, supplies and textbooks; and series 250, "Other" educational expenses. The cost of food service salaries, series 910, was also included in this residual implementary category.

Plant Implementary Costs. Plant implementary costs included the expenditures related to plant operation, series 600, and plant maintenance costs, series 700, in each of the comprehensives. These were derived from the actual expenditures made in these areas from July 1, 1970 to March 31, 1971 and the prorated costs from April 1, 1971 to June 30, 1971. The aggregated plant implementary costs were divided by the student enrollment of each comprehensive to obtain a per student-enrolled cost.

Non-Resident Implementary Costs.

Expenditures recorded in this category included: administration, series 100; pupil transportation, series 500; fixed charges, series 800; student body activities, series 1000; capital outlay, series 1200; debt service, series 1300; and outgoing transfer accounts, series 1400.

Costs were aggregated from each of the expenditure series named above and divided by the enrollment of the comprehensive to obtain non-resident implementary per student-enrolled costs.

Proration methods. Several methods were developed to prorate resident and non-resident implementary costs to curricular programs. The proration methods used by function-object-category are summarized in Figure 5. For example, the cost of plant operation salaries, series 610, were prorated to curricular program by dollar volume, to school by actual expenditure and to grade level by number of pupils.

Tables XXXVII - XXXIX in Appendix F provides the proration statistics

Expenditure Series	Proration Method		
	Curricular Program	Comprehensive	Grade
100 ADMINISTRATION			
110 Salaries	DV	NS	NS
120 Expenses	DV	NS	NS
200 INSTRUCTION			
210 Salaries	AE	AE	AE
211 Teachers	AE	AE	AE
212 Administrators	DV & T	AE	NS & T
213 Other Instr. St.			
a. Library	DV & T	AE & T	NS
b. AV & TV	DV & T	AE & T	NS
c. Guidance	DV & NS	AE & T	NS
d. Other			
1. Internal Sub.	DV	AE	NS
2. Sub. Teach.	DV	AE	NS
215 Clerical & Bus Sup St.	AE & DV	AE	NS
216 AV & TV Technicians	AE & DV	AE	NS
230 Library Equip & Sup.	AE & QC	AE	NS
235 AV Equip & Supplies	AE & QC	AE	NS
236 ETV Equipment	AE & QC	AE	NS
240 Instr. Equip. & Supp. (Curric.)	AE	AE	NS
242 General CR Equip. Supp. & Texts	AE & DV	AE	NS
250 Other	AE & DV	AE	NS
251 Computer Centre	AE & DV	AE	NS
Non-Res Instr. Expenses	DV	NS	NS
300 ATTENDANCE SERV.			
500 PUPIL TRANS.			
510 Salaries & Other	DV	NS	NS

FIGURE 5

PRORATION METHODS USED TO ALLOCATE EXPENDITURE TO CURRICULAR PROGRAMS, SCHOOLS, AND GRADES

Expenditure Series	Proration Method		
	Curricular Program	Comprehensive	Grade
600 PLANT OPERATION			
610 Salaries	DV	AE	NS
611 Utilities			
a. Fuel	DV	AE	NS
b. Light & Power	DV	AE	NS
c. Telephones	DV	AE	NS
d. Water	DV	AE	NS
650 Supplies			
a. Custodial	DV	AE	NS
651 Total Energy Supply and Contact	DV	AE	NS
Non-Resident Expenses	DV	NS	NS
700 PLANT MAINTENANCE			
710 Non-Resident Salary and Expenses	DV	NS	NS
720 Repair & Replace of Gen. Equip. & Furn.	AE & DV	AE	NS
800 FIXED CHARGES	DV	NS	NS
900 FOOD SERVICES			
910 Salaries	DV	AE	NS
1000 STUDENT BODY ACT.	DV	NS	NS
1200 CAPITAL OUTLAY	DV	NS	NS
1300 DEBT SERVICE FROM CURRENT FUNDS	DV	NS	NS
1400 OUTGOING TRANSFER ACCOUNTS	DV	NS	NS

Legend:

T: Time
AE: Actual expenditures
NS: Number of students
DV: Dollar volume
QC: Quantity consumed

FIGURE 5 (Concluded)

used in allocating resident and non-resident implementary costs to curricular programs. These statistics are prorations based on dollar volume resulting from direct instructional costs. For example, in Comprehensive A, 11.67 per cent of the total direct instructional costs were made in the English curricular program.

The dollar volume proration method based on expenditures in direct instructional cost was selected as the most appropriate method for this study. Duke (1970:94-95) adopted this method over the "Number of Pupils in a Program" and a combination of "floor space and pupil course enrollment". Duke (1970:94) based the "dollar volume" proration on direct instructional and resident indirect instructional costs. This method was not suitable for this study due to the lack of uniform accounting procedures for direct instructional equipment and supply costs maintained in the population comprehensives. As a result, dollar volume based on direct instructional costs was accepted as the most accurate proration base in this study.

Capital Cost

The capital building, site and equipment "use" cost for the school year 1970-1971 was considered in two subdivisions, capital building and site "use" cost and capital equipment "use" cost.

Capital building and site "use" cost. The cost of the use of the comprehensive buildings and sites for the school year 1970-1971 was determined on the basis of the gross life expectancy of the building. The life expectancy

of the comprehensive school buildings was estimated to be fifty years. This was outlined in the Government of Alberta, Department of Education School Building Regulations, and was accepted as applicable to Saskatchewan schools, as no official statement of building life-expectancy was available.

> The minimum age of existing space before it may be completely depreciated will normally be:
> (d) fifty years in the case of buildings erected with such materials as reinforced concrete, steel, glued-laminated members, masonry or any combination of such material (1970:11).

The estimated life of fifty years was submitted for consideration to a panel of three members of the Alberta Association of Architects, and the directors of school planning from two large urban school districts in Alberta. The opinion expressed was that fifty years was an adequate life expectancy figure, considering the function for which the buildings were constructed.

The "use" cost of the building and site was considered to be one-fiftieth of the total value of the building and site minus premium payments made on the debt charges under category 1310. The subtraction of the payment of capital debt eliminated double jeopardy in determining the capital "use" cost of the building and site.

The cost of capital building and site "use" was divided by the student enrollment of each comprehensive to determine the capital building and site per student-enrolled costs.

Capital Equipment "Use" Cost. The National Educational Finance Project Special Study No. 6, reporting the non-utilization of capital outlay in cost analysis studies, suggested four reasons for the omission:

1. Colleges that have been in operation for many years have had no need to keep up-to-date records on equipment since they were not required to provide depreciation schedules for auditing purposes.

2. Much of the equipment used in occupational programs in many colleges was "used" equipment, surplus property, or donated by industry making it difficult to assign a comparable dollar value on such equipment.

3. Several programs, data processing for example, have used rented equipment, and when the rental expense is computed as a part of the program operating cost, it inflates the cost differential tremendously. In the latter instance, it is difficult to decide whether it is equitable to include rental expense but not appropriate capital outlay expense when making comparisons in program costs.

4. It is very difficult to get a panel of judges to agree on the length of time appropriate to depreciate the total equipment not to mention each piece of equipment for a particular program (Wattenbarger, 1970:99).

Various researchers have attempted to obtain universal agreement on life expectancy of certain education equipment. Parry (1968) determined a life expectancy range of from 10 to 20 years for capital equipment in Comprehensive Junior Colleges in North Carolina, and, in his study, used thirteen years as the average life expectancy of capital equipment. Keene (1963) used an average life expectancy of ten years for capital equipment in his study of cost differentials for community colleges. Wells (1966) made no provision for depreciation and used all of the expense for capital outlay in one year as a one time charge. Wattenbarger, Cage, and Arney commented on Wells' approach by stating:

> This procedure has the extreme disadvantage of inflating unproportionately those programs for which the equipment was purchased. This is perhaps worse than no depreciation at all (1970:100).

The Illinois Junior College Board (1969) adopted an eight-year descending balance depreciation schedule. All capital outlay, except buildings and site, was depreciated on the following basis:

First year	- 12.5% for each of eight years
Second year	- 14.3% for each of seven years
Third year	- 16.7% for each of six years
Fourth year	- 20% for each of five years
Fifth year	- 25% for each of four years
Sixth year	- 33.3% for each of three years
Seventh year	- 50.0% for each of two years
Eighth year	- No depreciation

The Dade County Board of Education, Dade County, Florida, devised a depreciation schedule for equipment in vocational-technical programs at the secondary school level. They utilize a curvilinear regression technique, utilizing the cost of upkeep and maintenance as well as a depreciation schedule. When the depreciated value of the piece of equipment reached the same level as the expenditures for maintenance, the piece of equipment was to be replaced.

In his study of twenty junior colleges throughout the United States, Morsch (1969) found that none of the budgets he examined made proper allowances for depreciation, amortization or obsolescence, although equipment and repair replacemnt was shown as an expense when incurred. This was similar

to the situation found in the comprehensive high schools examined in this study.

An average life expectancy of ten years for capital equipment was adopted for this study. This gross figure was utilized due to the lack of uniformity of capital equipment records maintained within the comprehensives, and the inability to determine purchase dates of specific capital equipment items. This forms the basis for further study.

The "use" cost of capital equipment for the school year 1970-1971 was determined to be one tenth of the total value of the capital equipment in each comprehensive. The ratio of one-tenth was based on the average gross life expectancy of the equipment in terms of wear and obsolescence. The total value of the capital equipment was divided by ten to determine the gross aggregated capital use cost for the school year 1970-1971. This total was then divided by the per student enrollment in the individual comprehensives to obtain the capital equipment "use" per student-enrolled cost.

Ancillary Cost

The cost of transporting students from school unit or county attendance areas to the comprehensives was obtained from the school units and counties involved. The total costs obtained were aggregated for each comprehensive and the resulting total was divided by the student enrollment of the respective comprehensives to obtain a per student-enrolled ancillary cost.

VI. SUMMARY OF CHAPTER IV

The research procedures utilized in this study were divided into four stages. The first stage outlined the fomulation of the study and the preliminary activities required to obtain authorization for the study. The second stage described the ten sources of data used in this study. The methods used for collecting the required data were outlined in the third stage of this chapter. Four data collection stages were required to complete the data collections. The final stage described the treatment of data. Six different kinds of outputs were analyzed and the computer function and proration operations were described. These determined: (1) direct instructional costs; (2) resident indirect instructional costs; (3) resident implementary costs; (4) non-resident implementary costs; (5) capital use costs; and, (6) ancillary costs.

CHAPTER V

ANALYSIS AND FINDINGS

This chapter contains seven sections pertaining to the analysis and tabulation of the data of this study. The material is ordered in the same sequence as the sub-problems in Chapter I.

The first section deals with an analysis of the subjects taught in the comprehensive high schools, by program, grade, school and total population. The second section deals with an analysis of the qualification, experience, age, salary levels of the teaching staffs of the population schools. This staff analysis is followed by a description of the pertinent characteristics of each population comprehensive.

The third section contains an analysis of the direct instructional cost by subject, curricular program, and grade level. The fourth section deals with the resident indirect instructional costs by curricular program.

The fifth section considers the resident implementary, per student-enrolled costs. Two dimensions are considered, resident plant implementary and general implementary costs. General implementary costs are further analyzed into general service function, auxiliary service function, student supervision; and other non-program costs. The resident indirect and implementary costs are subsequently combined.

The sixth section of this chapter contains the total per student educa-

tional costs. These are tabulated by division, grade, curricular program and school. Also included is a complete breakdown of student-enrolled costs by a modified conventional function-object expenditure classification system, followed by a two dimensional program-budget format.

The seventh section contains an analysis of ancillary, capital building and site, and capital equipment costs of educating the students enrolled in the population comprehensives. These costs are then combined with total per student educational costs to determine complete educational costs.

I. STAFF ANALYSIS AND AUXILIARY DATA

Two tabulations are considered in this section as a basis for subsequent cost analysis in this study. The first tabulation is an analysis of selected demographic information relative to the teaching staffs of the population schools, professional qualifications, salary, experience (as determined for salary purposes) and age. This analysis was structured on the basis of comprehensive, population and curricular program, as required in specific sub-problems (1) and (2) listed on page 3 of this study.

The second segment of this section is a description of the operational structure of each of the comprehensives. This descriptive material, including student enrollment, establishes a contextual background for the cost analysis of the population comprehensives.

Average Teaching Qualifications, Experience, Age, Sex, and Salary of Teachers

Tables XXXIII, XXXIV, and XXXV (Appendix D) provide aggregated data relative to the teaching staffs of each comprehensive, the characteristics of the total teacher population, and aggregated data relative to the teachers by curricular program or teaching function within the comprehensives.

Table XXXIV (Appendix D) provides the total number of teachers, the average age, salary, experience, and training of the teachers in each comprehensive. The number of teachers in each comprehensive varied from a minimum of 23 in Comprehensive D to 82 teachers in each of Comprehensives F and G. The average age of teaching staff members ranged from the lowest average of 32.15 years in Comprehensive B to the highest average of 39.63 years in Comprehensive E. Salaries of teachers in the comprehensive high schools varied from the lowest of $8,715.32 in Comprehensive C to $11,120.57 in Comprehensive K. The comprehensive with the highest average experience was Comprehensive K with 7.97 years, Comprehensive G had the lowest experience of 5.62 years. The average training of staff members ranged from 3.95 years in Comprehensive A to 4.73 years in Comprehensive I.

Table XXXV (Appendix D) presents the average teacher's salary, age, experience and training for the 627 teachers in the eleven comprehensive high schools which constituted the population of this study.

Table XXXVI (Appendix D) outlines the number of teachers in each curricular area within the comprehensive schools and their average training,

experience, salary, and age. The percentage breakdown of the sex of the teachers in each curricular area is also provided. As presented in the All Schools Combined section of this Table, the teachers with the highest qualifications were science teachers with an average of 4.78 years of training followed by social studies and Christian Ethics teachers with 4.77 years and 4.75 years of training respectively. Business education teachers with an average of 3.64 years of training were the least qualified, followed by vocational-technical teachers with 3.76 years. All other teachers within the curricular areas averaged more than four years of training. Four years is considered to be the minimum requirement of a baccalaureate degree, and a professional teaching certificate in Saskatchewan.

Teachers of mathematics had the highest average teaching experience of 8.02 years, followed by social studies teachers with 7.71 years. Teachers of English, fine arts, modern languages, science, and vocational-technical had an average of between 6.00 and 7.00 years. Christian Ethics teachers had the lowest average experience of 2.25 years with physical education teachers having the second lowest average at 4.59 years.

Teachers' salaries were a direct function of the qualifications and experience of individual teachers. The average salaries of the teachers in the curricular areas substantiated this contention with mathematics teachers ($11,298.31) and social studies teachers ($11,061.26) having the highest average salaries. Christian Ethics teachers ($8,820.25) had the lowest average salary, followed by business education teachers ($9,133.23).

The highest average age teachers were the mathematics teachers with an average age of 37.71 years followed by social studies teachers with an average age of 37.08 years. The teachers with the lowest average age were teachers of Christian Ethics, at 26.50 years. Physical education teachers with an average age of 28.45 years were the second youngest group. Teachers of all other unnamed curricular programs had an average age of over 30.00 and under 37.00 years.

All home economics teachers in the population were female, as were 62.89 per cent of business education teachers. All other curricular programs were instructed by a majority of male teachers.

Other Pertinent Data

The eleven comprehensive high schools in the population were designated as Comprehensive A, B, C, D, E, F, G, H, I, J, and K in this study. This section refers to the operational characteristics of the schools for the school year 1970-1971. Tables XXXI and XXXII in Appendix D provide a summary of student enrollment data by comprehensive and curricular program.

Comprehensive A provided a Division IV program to 787 students instructed by forty-three staff members. Curricular programs were organized on a two-semester basis with 80 programs providing a total of 95 credits in seventeen curricular areas. The master timetable was structured on a twenty-five minute module extended over a five day week. The total potential assigned program instruction time was 1,775 minutes per week.

Full-time service function personnel in the school numbered three, the principal, a librarian, and a guidance counsellor. Part-time service function and teaching personnel included two vice-principals and a guidance counsellor who devoted fifty per cent of assigned time to instruction in the curricular programs, and a teacher-cafeteria manageress.

Comprehensive B conducted a Division IV program of 101 course offerings providing a total of 115 credits. The thirty-four teachers included a full-time principal and librarian and a vice-principal who devoted 36 per cent of assigned time to curricular program instruction.

The guidance counselling was provided by three teacher-counsellors on a partial assigned time basis. The guidance program was augmented by regularly assigned grade ten and eleven class guidance periods.

The master timetable for curricular programs operated on a two-semester structure, with a total assigned time of 1,980 minutes organized in a six day week. Students were assigned to classes for only 1,800 minutes per week, with the remaining 180 minutes, made up of a daily period of 30 minutes, being time assigned to staff members for curricular or service function activities.

Out-of-car driver education instruction was provided to grade ten students on a regularly timetable scheduled pattern. This program and the class guidance instruction were curricular programs unique to this comprehensive.

Comprehensive C provided a basic Division IV program augmented with Division III Grade IX courses for part-time students. Of the 525 students

enrolled, 489 were full-time Division IV students. The remaining Division III part-time students, who were transported from surrounding schools, aggregated to a total of thirty-six full-time equivalent students.

A yearly program was offered in Comprehensive C which was unique among the population comprehensives. Eighty-two courses in fifteen program areas were offered in the comprehensive resulting in a total credit offering of eighty-five credits. Period lengths within the daily timetable schedule varied resulting in a 1,950 minute average teaching week being assigned to staff members.

The comprehensive staff totalled thirty-one teachers, twenty-eight full-time and three part-time teachers. Full-time service function personnel included the principal, one librarian and one guidance counsellor. Service personnel with additional instructional assignments included a vice-principal, devoting sixty-six per cent of assigned time to administration, and a commercial cooking teacher, who managed the cafeteria. Six department heads were designated in this comprehensive.

Comprehensive D had the lowest enrollment in the population. Fifty-nine courses in twelve curricular areas providing fifty-six credits were offered to the 482 Division IV students enrolled. The two-semester curricular organization within the school was based on a five-day cycle of five periods a day of varying lengths providing a total assigned time of 1,525 minutes per week.

Twenty-three teachers were employed in this comprehensive. The principal and a librarian were the full-time service personnel in the school.

The vice-principal performed three functions on a time percentage listed: administration (41%), guidance counselling (30%), and curricular program instruction (29%).

Comprehensive E offered eighty courses and a total of eighty credits to 868 students in sixteen curricular areas in a two-semester organization. The curricular program included a Vocational A curricular area and an occupational upgrading program for North American Indian students.

Forty-four staff members were assigned to the school. This number included three full-time service function personnel: principal, librarian, and guidance counsellor. The two vice-principals performed administrative duties for 65 per cent of their assigned time and 35 per cent of their assigned time was devoted to curricular program instruction. Two additional service function personnel were assigned curricular area instruction duties and the functions of receiving new equipment and adult education coordination.

This comprehensive was organized on a twenty minute module, six day week cycle totalling 1,920 minutes during the first semester. This organization changed to six equal periods, on a six day week cycle to a total of 1,920 minutes during the second semester.

Comprehensive F had the largest total of student enrollment in the population, 1,675 students, in a Division III, Grade VIII and IX, and a Division IV program. The Division III program of 22 courses was a non-option course with students having a 1,650 minute week of required courses. The art, music, physical education, and general technical courses were team-taught. The

Division IV program was composed of 91 courses with a total of 100 credits. Two programs, business education and technology were offered in the technical-vocational area, with a total of 15 courses and 19 credits, the remaining 76 courses and 81 credits were offered in the academic area.

The staff of eighty-one teachers included three part-time teachers, one principal and two vice-principals as full-time administrators, one full-time and one quarter-time guidance counsellor and one full-time librarian.

The master timetable was based on a two-semester plan with a modified five day week program of 1,650 minutes. All Division IV courses were based on thirty minute periods, and the Division III courses were 50 or 60 minutes in length. All Division IV students received one group guidance period of thirty minutes per week. Division III students had home room supervision of a total of 25 minutes per week.

Comprehensive G provided a Division III, Grade IX program of 24 courses and 26 credits and a Division IV program of 125 courses and 132 credits. Division III students were permitted options in the non-core subject areas.

The master timetable of the two-semester program was composed of seven sixty-minute periods per day on a five day week. Teachers were assigned five periods (300 minutes) a day, making the teacher workload 1,500 of a 2,100 minute timetable scheduled week. (Through this organization, potentially 40 per cent more classes could be scheduled on the timetable, making use of the existing facilities to encompass a larger school enrollment.)

Students numbering 1,632 were instructed by a staff of 77 which included the following full-time service personnel: one principal, two vice-principals, one audio-visual television service teacher, two librarians and a full-time social studies teacher involved in the production of social studies television instructional materials, and two full-time guidance counsellors. There were nine department heads and one technical vocational coordinator in the school.

Comprehensive H had a school enrollment of 1,579 students, 394 Division III, Grade IX students, and 1,185 Division IV students. Thirteen Division III courses were offered for a total of thirteen credits. Ninety-four courses in sixteen program areas were offered in the Division IV area, with a credit offering of one hundred and three.

The eighty-two teachers on staff included the following full-time service personnel: one principal, two vice-principals, three guidance counsellors, and one librarian. Part-time teacher-service personnel included nine department heads, five shop heads, and a remedial reading teacher.

The master timetable of this two-semester school called for five 67-minute periods a day on a six day week program making a total of 2,010 assigned minutes per week. One or two periods a week were designated as staff meeting periods in various subject areas.

Comprehensive I had a school enrollment of 1,549 students, 369 Division III, Grade IX students, and 1,180 Division IV students. The Division

III program was 13 courses in ten subjects with a credit total of 13. The Division IV program provided 103 courses and 104 credits in sixteen subject areas.

The seventy-nine teachers on staff included one part-time teacher and the following full-time service personnel: one principal, two vice-principals, three guidance counsellors, and one librarian. Teacher-service personnel included eight department heads, five shop heads and one remedial reading teacher.

The master timetable in this two-semester comprehensive called for five 65-minute periods per day on a six-day week organization making a total of 1,950 minutes of assigned time per week.

Comprehensive J provided a Division IV program for 1,303 students with 133 courses totalling 141 credits offered in 18 subject areas. This school had the largest number of Division IV students of the population comprehensives.

The teaching staff was composed of 69 teachers in the first semester and 68 teachers in the second semester which included one half-time librarian. Full-time service personnel included: one principal, one academic director, one technical-vocational director, one librarian and two guidance counsellors. Teacher service personnel included seven department heads, one adult education director, one television coordinator, and one audio-visual coordinator.

The master timetable for this two-semester comprehensive called for six fifty-six minute periods a day on a six-day week cycle making a total of

2,016 minutes of assigned teaching time per week. Although not called for on the timetable, teachers were expected to provide at least one period per week on an individual and group guidance program for students assigned to them.

Comprehensive K provided a Division IV program of 153 courses totalling 199 credits in 17 program areas to 1,131 students. This school had the largest number of course offerings and total credits of any of the population comprehensives.

The professional staff of 59 teachers included one part-time electronics teacher. Full-time service personnel included: one principal, two vice-principals, two guidance counsellors, one librarian, one resource centre director. Teacher-service personnel included: one guidance counsellor and six department heads.

The master timetable operated on a four-day week repeating cycle of three sixty-minute periods and two sixty-five minute periods a day, and one ten-minute group guidance home room period a day making a weekly cycle of 1,280 minutes per week.

II. DIRECT INSTRUCTIONAL COSTS

Five analyses pertaining to direct instructional costs presented the findings relative to specific sub-problems numbered 4 to 8 on page 3 of this study.

Direct instructional costs were affected by three basic factors:

(1) teacher's salary, (2) course enrollment, and (3) teacher's general preparation time. Teachers' salaries were a function of their qualifications and experience, and were a given factor once teachers were employed. Course enrollment varied according to the class size priorities within subjects, and the number of students enrolled in a subject.

Teacher general preparation time, which was prorated proportionately to the assigned instructional class time of the teacher, averaged 16.63 per cent of the direct instructional costs in the population as shown in Table I. Individual schools varied from a low of 11.06 per cent in Comprehensive B to 24.53 per cent in Comprehensive J. The higher the percentage of general preparation time to actual class instruction time, the higher the direct instructional cost.

Direct Instructional Costs per Student-Course: Division III, Grade VIII

Division III, Year III, Grade VIII, was offered only in Comprehensive F. The program provided was standard for all students with the exception of individualized mathematics which was offered to selected students in place of the regular mathematics 80 course. Table II presents the direct instructional costs per pupil course of Grade VIII in Comprehensive F.

Variation in course cost was the result of: (1) low enrollment in individualized mathematics, (2) course time in the cost of English, home economics, industrial arts, mathematics, and physical education, which received more instructional time than French, science, social studies, music and art.

TABLE 1

INSTRUCTIONAL COST AND GENERAL PREPARATION COST AS A FUNCTION OF DIRECT INSTRUCTIONAL COST BY COMPREHENSIVE

Comprehensive		Instructional Cost	General Prep. Cost	Direct Instructional Cost	No. of Student-Courses	Instruction Per Student Cost	General Prep. Per Student-Cost	Direct Instructional Per Student Cost	Per Cent General Prep of Total Direct Cost
A:	Academic	215,604.56	32,935.18	248,539.69	4782	45.09	6.89	51.97	13.26
	Voc. Tech.	97,916.75	18,070.61	115,987.31	1495	65.50	12.09	77.58	15.58
	Total	313,521.31	51,005.79	364,527.00	6277	49.95	8.13	58.07	13.99
B:	Academic	159,102.50	20,378.33	179,480.81	4886	32.56	4.17	36.73	11.35
	Voc. Tech.	59,786.82	6,842.29	66,629.06	1342	44.55	5.10	49.65	10.27
	Total	218,889.31	27,220.61	246,109.87	6228	35.15	4.37	39.52	11.06
C:	Academic	137,008.12	17,362.78	154,370.87	3429	39.96	5.06	45.02	11.24
	Voc. Tech.	54,671.97	6,550.75	61,222.72	1035	52.82	6.33	59.15	10.70
	Total	191,680.06	23,913.53	215,593.56	4464	42.94	5.36	48.30	11.10
D:	Academic	116,934.50	22,499.86	139,434.31	4651	25.14	4.84	29.98	16.14
	Voc. Tech.	28,331.51	4,038.05	32,369.55	685	41.36	5.89	47.25	12.47
	Total	145,266.00	26,537.91	171,803.81	5336	27.22	4.97	32.20	15.43
E:	Academic	202,930.17	63,204.25	266,134.62	5197	39.05	12.16	51.21	23.74
	Voc. Tech.	63,643.91	16,484.35	80,128.25	1188	53.57	13.88	67.45	20.58
	Total	266,574.25	79,688.56	346,262.87	6385	41.75	12.48	54.23	23.01
F:	Academic	531,160.44	103,307.56	634,468.00	15829	33.56	6.53	40.08	16.29
	Voc. Tech.	73,923.75	12,736.09	86,659.81	1450	50.98	8.87	59.77	14.84
	Total	605,084.19	116,043.62	721,127.81	17279	35.02	6.72	41.73	16.10
G:	Academic	371,873.56	104,775.69	476,649.25	10718	34.70	9.78	44.47	21.99
	Voc. Tech.	100,450.06	23,392.31	123,842.31	1852	54.24	12.63	66.87	18.89
	Total	472,323.06	128,167.94	600,491.56	12570	37.58	10.20	47.77	21.35
H:	Academic	475,951.37	73,547.50	549,498.87	11652	40.85	6.31	47.16	13.38
	Voc. Tech.	134,312.44	33,382.62	167,695.00	2249	59.72	14.84	74.56	19.90
	Total	610,263.81	106,930.06	717,193.87	13901	43.90	7.69	51.59	14.91
I:	Academic	470,469.87	108,607.50	579,077.37	10850	43.36	10.01	53.37	18.76
	Voc. Tech	134,222.75	30,044.80	164,267.50	2351	57.09	12.78	69.87	18.29
	Total	604,692.62	138,652.25	743,344.87	13201	45.81	10.50	56.31	18.65
J:	Academic	282,307.00	96,674.88	378,981.87	9311	30.32	10.38	40.70	25.50
	Voc. Tech.	128,577.62	36,827.96	165,405.56	2486	51.72	14.81	66.53	22.33
	Total	410,884.62	133,502.81	544,387.44	11797	34.83	11.32	46.15	24.53
K:	Academic	301,795.00	45,440.22	347,235.19	8146	37.05	5.58	42.63	13.09
	Voc. Tech.	153,381.25	21,419.05	174,800.25	2569	59.70	8.34	68.04	12.25
	Total	455,176.25	66,859.25	522,035.44	10715	42.48	6.24	48.72	12.81

TABLE II

DIVISION III, GRADE VIII
DIRECT INSTRUCTIONAL COSTS PER STUDENT-COURSE
ENROLMENT IN COMPREHENSIVE SCHOOL F

Courses	Course Enrolment	Per Student Course Enrolment Costs
ENGLISH		
English 80	311	65.47
	311	65.47
FINE ARTS		
Art 80[1]	312	26.96
Music 80[1]	315	38.42
	627	32.67
HOME ECONOMICS		
Home Economics 80[1]	152	73.42
	152	73.42
MATHEMATICS		
Mathematics 80	305	59.13
Individual Math 89	12	157.60
	317	62.85
MODERN LANGUAGES		
French 80	313	38.06
	313	38.06
PHYSICAL EDUCATION		
Phys Ed & Health[1]	311	45.81
	311	45.81
SCIENCE		
Science 80	310	27.87
	310	27.87
SOCIAL STUDIES		
Social Studies 80	312	37.57
	312	37.57
GENERAL		
Industrial Arts 80[1]	165	79.00
	165	79.00

[1] Instructed by team teaching

Direct Instructional Cost Per Student-Course: Division III, Grade IX

Division III, Year III, Grade IX, was offered in Comprehensives F, G, H, and I. School F provided a nonoption program of eleven courses, while G, H, and I offered required basic courses in English, mathematics, science, social studies, physical education and health, home economics and industrial arts, with options in art, music, French, drafting, business education, and commercial cooking.

Table III presents the direct instructional costs for the four comprehensive schools offering the Grade IX program. The variation in unit costs was a result of the different time periods of instruction in the comprehensives, and where time periods were relatively equal, Comprehensives H and I had higher costs due to higher average teacher salaries. The courses, numbered 92, were modified courses designed for slower learning students in Comprehensive G.

Three distinct ranges of student-enrolled costs were identified. (1) The lowest cost programs were Christian Ethics, fine arts, mathematics, modern languages, science, social studies, business education and drafting, (2) The mid range cost programs were English and physical education. (3) The high cost subjects were home economics, commercial cooking and industrial arts.

Direct Instructional Costs: Division IV, Grade X

Grade X direct instructional costs are presented in Table IV. A total of 124 courses were offered at the Grade X level. The instructional time of

TABLE III

DIVISION III, GRADE IX
DIRECT INSTRUCTIONAL COSTS PER STUDENT-COURSE ENROLMENT IN COMPREHENSIVE SCHOOLS F, G, H, AND I

Course	F		G		H		I	
	Course Enrolment	Per Student Course Enrolment Costs	Course Enrolment	Per Student Course Enrolment Costs	Course Enrolment	Per Student Course Enrolment Costs	Course Enrolment	Per Student Course Enrolment Costs
CHRISTIAN ETHICS:								
Christian Ethics 90			374	22.15				
Christian Ethics 92			66	41.84				
Total			440	25.10				
ENGLISH								
English 90	350	72.50	372	51.01	405	85.08	421	67.15
English 92			84	37.53				
Total	350	72.50	465	48.53	405	85.08	421	67.15
FINE ARTS								
Art 90	347	28.42	51	69.07	236	43.45	134	44.31
Art 92			6	67.83				
Music 90	351	39.34	14	90.72	76	48.95	30	40.92
Music 92			3	121.17				
Total	698	33.91	74	75.17	312	41.15	164	43.69
HOME ECONOMICS								
Home Economics 90	166	74.58	142	91.00	196	56.75	166	82.50
Home Economics 92			20	54.57				
Total	166	74.58	162	86.50	196	56.75	166	82.50
MATHEMATICS								
Mathematics 90	345	67.36	408	59.78	430	44.31	413	49.50
Mathematics 92			82	56.80				
Individual Math 89	14	123.02						
Total	359	79.84	490	59.29	430	44.31	413	49.50

TABLE III (Continued)

Course	F		G		H		I	
	Course Enrolment	Per Student Course Enrolment Costs	Course Enrolment	Per Student Course Enrolment Costs	Course Enrolment	Per Student Course Enrolment Costs	Course Enrolment	Per Student Course Enrolment Costs
MODERN LANGUAGES								
French 90	350	41.78	224	52.22	304	44.37	341	46.02
French 92			24	92.56				
German 90			29	70.72	94	61.28	70	44.45
Ukrainian			6	197.46				
Total	350	41.78	283	60.61	398	48.36	411	45.77
PHYSICAL EDUCATION								
Health & Phys Ed 90	350	54.08	432	30.47	406	42.79	317	61.64
Physical Education 90			401	17.88				
Total	350	54.08	833	24.41	406	42.79	317	61.64
SCIENCE								
Science 90	353	30.89	290	39.39	410	47.90	388	53.73
General Science 92			169	51.71				
Total	353	30.89	459	43.93	410	47.90	388	53.73
SOCIAL STUDIES								
Social Studies 90	348	27.50	315	38.17	405	54.42	408	53.64
Social Studies 92			88	52.93				
Total	348	27.50	403	41.39	405	54.42	408	53.64
BUSINESS EDUCATION								
Typing 90			274	27.29	63	41.89		
Typing 92			48	44.52				
Total			322	29.86	63	41.89		
COMMERCIAL COOKING								
Food Services 92			6	100.37				
Total			6	100.37				
DRAFTING								
Drafting 90							250	51.23
Total							250	51.23
TECHNOLOGY								
Industrial Arts	188	79.72			216	135.84	217	168.12
Total	188	79.72			216	135.84	217	168.12

TABLE IV

GRADE TEN DIRECT INSTRUCTIONAL COSTS PER STUDENT-COURSE ENROLMENT IN THE COMPREHENSIVE SCHOOLS

Course	Credit	A		B		C		D		E		F	
		Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost
CHRISTIAN ETHICS													
Christian Ethics 10	1												
Total													
ENGLISH													
English 10	2	330	51.35			192	63.66			301	60.96	342	59.70
Composition 10	1			237	37.01			177	28.73				
Literature 10	1			242	34.06			184	28.91				
English 11/12	2									9	116.81		
English 10 Honors	2											29	56.44
Remedial English 10	2											7	216.35
Trade English	1												
General English	1												
Total		330	51.35	479	35.52	192	63.66	361	28.82	310	62.58	378	62.35
FINE ARTS													
Art 10	1			55	47.71					26	47.77	92	43.95
Art 12	1												
Drama 10	1	17	25.60	14	69.73								
Drama 12	1												
Music 10	1	92	63.61										
Choral Music 10	1												
Music Vocal 10	1												
Band 10	1			7	97.84								
General Music 10	1												
Music 12	1												
Total		109	57.68	76	56.38					26	47.77	92	43.95
HOME ECONOMICS													
Home Economics 10	1	72	64.67	86	44.12	121	64.73	57	70.04	83	95.75	86	65.52
Home Economics 11	0.5												
Total		72	64.67	86	44.12	121	64.73	57	70.04	83	95.75	86	65.52

TABLE IV

GRADE TEN DIRECT INSTRUCTIONAL COSTS PER STUDENT-COURSE ENROLMENT IN THE COMPREHENSIVE SCHOOLS

	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
CHRISTIAN ETHICS											
Christian Ethics 10	1	382	21.48								
Total		382	21.28								
ENGLISH											
English 10	2	340	51.58	459	93.50	420	63.07			216	60.54
Composition 10	1							431	38.00		
Literature 10	1							431	34.12		
English 11/12	2	58	68.91			37	151.61				
English 10 Honors	2										
Remediol English 10	2							26	36.46		
Trade English	1							26	36.46	51	111.36
Generol English	1									79	60.20
Totol		398	54.10	459	93.50	457	70.24	914	36.08	346	67.90
FINE ARTS											
Art 10	1	33	67.25	103	47.00	54	54.97	86	55.48	129	52.50
Art 12	1	7	58.76								
Dromo 10	1	4	194.52					12	94.79		
Droma 12	1	2	194.59								
Music 10	1	5	94.85	35	70.30					27	23.05
Choral Music 10	1							4	77.86		
Music Vocal 10	1							16	127.34		
Band 10	1					70	26.73				
General Music 10	1					8	158.33				
Music 12	1	6	89.00								
Total		57	84.32	138	52.91	132	46.26	118	69.98	156	47.41
HOME ECONOMICS											
Home Economics 10	1	52	82.02	77	61.04	56	99.25	132	63.86	45	56.77
Home Economics 11	0.5									47	52.40
Total		52	82.02	77	61.04	56	99.25	132	63.86	92	54.54

TABLE IV (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
MATHEMATICS													
Algebra 10	1			248	29.72			158	35.42	277	46.21	304	33.90
Algebra 10 Honors	1											27	49.26
Algebra 10 Special	1											48	42.55
Algebra Enriched 10	1												
General Math 10	1	336	65.10			211	60.46	50	34.31	94	51.22	20	72.05
Trade Math 10	1												
Shop Math 10	1					12	116.81						
Geometry 10	1			177	32.55			147	34.06	54	40.41	275	34.32
Math 12	1												
Geometry Special 11	1												
Computer Science 10	1												
Traditional Geometry 11	1												
Total		336	65.10	425	30.90	223	63.49	355	34.70	425	46.58	674	36.43
MODERN LANGUAGES													
French 10	1	148	26.64	100	38.60	76	55.02	84	55.76	82	62.92	232	51.58
French 10 Honors	1											46	46.44
French Oral 10	1									20	52.56		
French Written 10	1									19	105.08		
German 10	1												
Ukrainian 10	1												
Total		148	26.64	100	38.60	76	55.02	84	55.76	121	67.83	278	50.73
PHYSICAL EDUCATION													
Physical Education 10	1	442	56.58			20	62.72	18	22.26	54	45.51	376	27.99
Physical Educatian N/C	0			228	18.78	219	18.84	238	16.01	304	9.35		
Total		442	56.58	228	18.78	239	22.51	181	23.26	358	14.80	376	27.99

TABLE IV (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
MATHEMATICS											
Algebra 10	1	344	40.16	433	46.88	380	42.28	386	40.67	211	44.33
Algebra 10 Honors	1										
Algebra 10 Special	1									43	130.33
Algebra Enriched 10	1							23	43.01		
General Math 10	1	110	52.92			44	74.22	94	50.09	66	21.73
Trade Math 10	1									57	44.34
Shop Math 10	1										
Geometry 10	1	185	45.21	190	40.01	119	50.93	114	43.08	70	41.63
Math 12	1	31	73.13								
Geometry Special 11	1	13	120.89								
Computer Science 10	1									26	26.80
Traditional Geometry 11	1			24	60.94						
Total		683	46.61	647	45.38	543	46.76	617	42.63	412	42.63
MODERN LANGUAGES											
French 10	1	102	64.85	218	45.65	281	44.03	247	56.80	169	41.32
French 10 Honors	1										
French Oral 10	1										
French Written 10	1										
German 10	1	18	57.31	39	78.63	48	43.75	57	62.61	15	86.18
Ukrainian 10	1									38	67.02
Total		120	63.72	257	50.65	329	43.99	304	57.89	222	48.75
PHYSICAL EDUCATION											
Physical Educ. 10	1	56	61.14								
Physical Educ. N/C	0			402	40.52	413	33.81	827	17.43	654	9.80
Total		56	61.14	402	40.52	413	33.81	827	17.43	654	9.80

TABLE IV (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
SCIENCE													
Science 10	1	314	43.18	243	27.57	196	43.77			300	52.67	308	34.64
Science 10 Special	1											46	41.27
General Science 10	1							180	36.50			10	151.45
Intro Physical Sc. 10	1												
Science 11/12	1												
Total		314	43.18	243	27.57	196	43.77	180	36.50	300	52.67	364	38.69
SOCIAL STUDIES													
Social Studies 10	1	333	36.45	237	40.06	197	59.13	177	41.89	291	43.19	11	76.74
Social St. Modified 10	1												
General Soc. St. 12	1												
History 10	1											333	40.41
History 10 Honors	1											33	30.35
Geography 10	1	56	39.99	12	86.21	62	31.66	24	32.94	37	55.69	29	31.42
Total		389	36.95	249	42.28	259	52.55	201	40.82	328	44.60	411	36.43
AGRICULTURE													
Agricultural Mech. 10	1			12	56.76								
Agricultural Tech. 18	1			12	56.76	9	93.96						
Farm Mechanics 10	1					30	57.28						
Voc. Agriculture 10	0.5												
Total				24	56.76	39	65.75						
BUSINESS EDUCATION													
Accounting 10	1												
Bookkeeping 10	1	137	36.59	52	24.22	33	40.00	50	38.57	64	58.41	61	52.77
Bus. Introductory 10	1												
Bus. Records 10	1									13	100.08		
Calc. Mach. & Math 10	1									9	73.88		
General Business 10	1												
Office Procedures 10	1												
Shorthand 10	1	97	38.18							33	64.66		
Typing 10/12	1	281	40.41	91	39.49	145	32.27	155	30.95	167	33.01	248	22.53

TABLE IV (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
SCIENCE											
Science 10	1	345	34.83	434	43.68						
Science 10 Special	1										
General Science 10	1					287	42.65	452	40.66	125	36.87
Intro. Physical Sc. 10	1					146	55.16			227	41.90
Science 11/12	1	35	75.18			29	58.45				
Total		380	38.55	434	43.68	462	47.59	452	40.66	352	40.11
SOCIAL STUDIES											
Social Studies 10	1	365	36.68	424	47.25	429	59.48	473	36.41	222	45.10
Social St. Modified 10	1	47	39.78			39	74.87				
General Soc. St. 12	1									134	44.05
History 10	1										
History 10 Honors	1										
Geography 10	1			57	54.82	39	69.01	57	34.91	58	40.66
Total		412	37.03	481	48.14	507	61.39	530	36.24	414	44.13
AGRICULTURE											
Agricult. Mech. 10	1										
Agric. Tech. 18	1							26	111.85		
Farm Mechanics. 10	1										
Voc. Agriculture 10	0.5									37	31.87
Total								26	111.85	37	31.87
BUSINESS EDUCATION											
Accounting 10	1	102	34.68								
Bookkeeping 10	1	3	193.66			31	44.48	183	35.53	141	38.75
Bus. Introductary 10	1					32	47.07	13	63.26		
Bus. Records 10	1										
Calc. Mach & Math 10	1	8	67.58								
General Business 10	1			88	39.21						
Office Proc. 10	1	9	78.77								
Shorthand 10	1										
Typing 10/12	1	126	28.56	173	30.79	191	42.90	315	28.88	272	44.70

TABLE IV (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
Business Education Con't													
Typing 17	1									19	46.66		
Typing 18	1												
Business Typing 11	1												
Typing 17	1									11	105.17		
Total		515	38.97	143	33.94	178	33.71	205	32.81	316	48.70	309	28.50
COMMERCIAL COOKING													
Com. Cooking 10/14	1	18	92.01							54	35.62		
Food Services 10	1					8	83.40						
Food Services 12/14	1												
Total		18	92.01			8	83.40			54	35.62		
COSMETOLOGY													
Beauty Culture 10	1												
Cosmetology 1	1												
Cosmetology 10	1												
Cosmetology 12	1												
Total													
DRAFTING													
Drafting 13	1			99	30.72			53	70.59				
Drafting Tech 13	1					19	41.93						
Drafting Voc. 13	1					16	51.39						
Drafting Explor. 13	1									22	127.12		
Total				99	30.72	35	46.25	53	70.59	22	127.12		
ELECTRICAL													
Electricity 13	1												
Electrical Explor. 11	1									66	68.12		
Electrical Electron 11	0.5												
Electrical Tech 13/14	1			23	88.84	22	35.04						
Electrical Voc. 14	1					18	89.94						
Electrical-Electron. 14	1							36	52.95				
Total				23	88.84	40	59.74	36	52.95	66	68.12		

TABLE IV (Continued)

Course	Credit	G Course Enrol-ment	G Per Student Course Enrol ment Cost	H Course Enrol-ment	H Per Student Course Enrol ment Cost	I Course Enrol-ment	I Per Student Course Enrol ment Cost	J Course Enrol-ment	J Per Student Course Enrol ment Cost	K Course Enrol-ment	K Per Student Course Enrol ment Cost
Business Ed. Con't											
Typing 17	1	10	54.13								
Typing 18	1	6	110.61								
Business Typing 11	1					30	50.21				
Typing 17	1										
Total		264	38.52	261	33.63	309	45.81	511	32.13	413	42.67
COMMERCIAL COOKING											
Com. Cook. 10/14	1							25	41.47		
Food Services 10	1	8	75.27	61	59.30						
Food Services 12/14	1	19	64.69			14	70.06				
Total		27	67.83	61	59.30	14	70.06	25	41.47		
COSMETOLOGY											
Beauty Culture 10	1									73	33.16
Cosmetology 1	1							72	29.42		
Cosmetology 10	1	55	41.01								
Cosmetology 12	1	11	76.87								
Total		66	46.99					72	29.42	73	33.16
DRAFTING											
Drafting 13	1			68	57.12	106	61.52				
Drafting Tech. 13	1							37	43.03	15	33.75
Drafting Voc. 13	1										
Drafting Explor. 13	1										
Total				68	57.12	106	61.52	37	43.03	15	33.75
ELECTRICAL											
Electricity 13	1					33	87.50				
Electrical Explor. 11	1										
Electrical Electron 11	0.5									37	41.83
Electrical Tech. 13/14	1			79	74.50			18	35.16		
Electrical Voc. 14	1										
Electrical-Electron 14	1										
Total				79	74.50	33	87.50	18	35.16	37	41.83

TABLE IV (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
GENERAL													
Enginer. Tech. 14	1					10	164.71						
Exploration 14	1	29	65.87										
Tech. Exploratory A	1												
Tech. Exploratory B	1												
C.M.E. 10	1												
D.A.W. 10	1												
Total		29	65.87			10	164.71						
MECHANICAL													
Automotives 11	0.5												
Special Auto 14	2												
Motor Mech. 14	1					50	65.83	58	39.83				
Mechanics 11	0.5												
Mechanics 13	1												
Machine Shop 11	0.5												
Mach-Weld-Mat.10	1												
Metal 14	1					27	63.65						
Mech. Explor. 10	1									91	78.89		
Mech. Tech. 1	1												
Mech. Tech. 14	1			52	65.89								
Welding 11	0.5												
Total				52	65.89	77	65.06	58	39.83	91	78.89		
STRUCTURAL													
Construct. 10/13	1					24	91.99	44	73.46				
Construct. 11	0.5												
Construct. Bldg. 14	1												
Construct. Explor	1									11	114.95		
Construct. Tech. 14	1			36	75.00								
Structural Tech. 1	1												
Total				36	75.00	24	91.99	44	73.46	11	114.95		

TABLE IV (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
GENERAL											
Enginer. Tech. 14	1										
Exploration 14	1										
Tech. Explor. A	1							106	64.62		
Tech. Explor. B	1							112	96.34		
C.M.E. 10	1	189	81.03								
D.A.W 10	1	167	99.08								
Total		356	89.50					218	80.91		
MECHANICAL											
Automotives 11	0.5									73	23.56
Special Auto 14	2							18	217.99		
Motor Mech. 14	1										
Mechanics 11	0.5									40	34.41
Mechanics 13	1					168	77.78				
Machine Shop 11	0.5									57	24.46
Mach-Weld-Mat-test 10	1			36	106.51						
Metal 14	1										
Mech. Explor. 10	1										
Mech. Tech. 1	1							75	104.87		
Mech. Tech. 14	1			65	130.64						
Welding 2	0.5									81	26.49
Total				101	122.04	168	77.78	93	126.76	251	26.44
STRUCTURAL											
Construct. 10/13	1					40	137.03				
Construct. 11	0.5									46	41.20
Construct. Bldg. 14	1			56	96.24						
Construct. Explor 10	1										
Construct. Tech. 14	1										
Structural Tech. 1	1							8	139.76		
Total				56	96.24	40	137.03	8	139.76	46	41.20

TABLE IV (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
MEDIA													
Graphic Commun. 14	1												
Total													
TECHNOLOGY													
Shop 10 A	1											12	300.19
Technology 13	2											111	146.87
Total												123	161.83
DRIVER EDUCATION													
Driver Education 10	0			220	4.00								
Total				220	4.00								
GUIDANCE													
Guidance 10	0			218	5.85								
Total				218	5.85								
VOCATIONAL A													
Occup. Auto.	0	24	24.06										
Occup. Draft.	0	24	33.98										
Occup. Elect.	0	24	33.98										
Occup. Eng.	0	36	52.86										
Occup. Math	0	24	79.24										
Occup. Mech.	0	24	28.74										
Occup. Science	0	24	71.40										
Occup. Soc. St.	0	24	71.40										

TABLE IV (Continued)

Course	Credit	G Course Enrol-ment	G Per Student Course Enrol ment Cost	H Course Enrol-ment	H Per Student Course Enrol ment Cost	I Course Enrol-ment	I Per Student Course Enrol ment Cost	J Course Enrol-ment	J Per Student Course Enrol ment Cost	K Course Enrol-ment	K Per Student Course Enrol ment Cost
MEDIA											
Graphic Commun. 14	1			16	66.81	143	62.14			124	34.14
Total				16	66.81	143	62.14			124	34.14
TECHNOLOGY											
Shop 10 A	1										
Technology 13	2										
Total											
DRIVER EDUCATION											
Driver Education 10	0										
Total											
GUIDANCE											
Guidance 10	0										
Total											
VOCATIONAL A											
Occup. Auto.	0										
Occup. Draft.	0										
Occup. Elect.	0										
Occup. Eng.	0									28	215.81
Occup. Math	0										
Occup. Mech.	0										
Occup. Science	0										
Occup. Soc. St.	0										

TABLE IV (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
VOCATIONAL A (Continued)													
Occup. - Boys	0									37	83.92		
Occup. - Girls	0									11	188.71		
Occup. - Upgrading	0									53	175.08		
Occup. - Academic	0												
Occup. - Tech Trade	0												
Occup. - Home Ec.	0												
Special Ed. Typing	0												
Special Ed. Agric.	0												
Total		204	49.66							101	130.07		

TABLE IV (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
VOCATIONAL A											
Occup. - Boys	0										
Occup. - Girls	0										
Occup. - Upgrading	0										
Occup. - Academic	0							49	148.07	82	66.14
Occup. - Tech Trade	0							7	172.62		
Occup. - Home Ec.	0							7	180.83		
Special Ed. Typing	0									24	69.86
Special Ed. Agric.	0									35	36.50
Total								93	115.20	169	85.33

each course was in direct proportion to the number of credits allocated for the course within a school. All academic subjects with the exception of English 10 and 12 were one credit classes. Vocational-Technical classes were one-half, one, or two credit classes in Grade X.

Table V presents the range of direct instructional unit cost in each curricular program, and the average unit course cost based on the cost per student-course equivalent rather than per student course-enrollment as in Table IV. Per student course equivalent cost equated each course to one credit basis, with the exception of two credits in English. The use of per student course-equivalent direct instructional costs permitted comparison between comprehensives on a standard base, and eliminated the need to transpose on the basis of course credit, the direct instructional cost of each course presented in the student course enrollment.

Three distinct direct instructional cost levels per student course-equivalent became apparent in grade X. The highest cost curricular programs (over $90.00) were structural, general and technology. The mid-range programs were mechanical, agriculture, home economics, electrical, English (2 credit), and commercial cooking. The least expensive curricular programs (under $60.00), included in the technical-vocational area, were: drafting, cosmetology, business education, and the remainder of the academic subjects with the exception of home economics. These courses had high student enrollments, and large class enrollments which resulted in lower direct instructional costs.

Driver education and guidance in Comprehensive B were non-credit

TABLE V

DIRECT INSTRUCTIONAL PER STUDENT-COURSE EQUIVALENT UNIT COST MAXIMUM, MINIMUM RANGE AND AVERAGE UNIT COST BY CURRICULAR PROGRAM FOR POPULATION COMPREHENSIVES

Grade Ten

Curricular Program	Course Unit Cost Range Minimum	Maximum	Average Course Unit Cost
Christian Ethics	21.48	21.48	21.48
English [a]	51.35	93.60	66.04
Fine Arts	43.95	84.32	44.78
Home Economics	44.12	99.25	72.03
Mathematics	30.89	65.10	46.02
Modern Languages	38.60	67.83	50.87
Physical Education [a]	14.80	56.58	29.93
Science	27.57	47.59	38.45
Social Studies	36.24	61.39	44.00
Agriculture	56.76	111.85	74.53
Business Education	28.50	48.70	37.21
Commercial Cooking	35.62	92.01	64.24
Cosmetology	29.42	46.99	36.52
Drafting	30.72	127.12	58.76
Electrical	35.16	88.84	68.81
General	65.87	164.71	100.25
Mechanical	39.83	105.67	76.00
Media	34.14	66.81	54.36
Structural	73.46	137.03	101.35
Technology	95.55	95.55	95.55
Driver Education [b]	4.00	4.00	4.00
Guidance [b]	5.85	5.85	5.85
Vocational A	44.15	149.32	107.80

[a] Based on two credits
[b] Non credit courses offered in Comprehensive B

courses offered one period per week, resulting in direct instructional costs of under ten dollars per student.

The effect of the enrollment on direct instructional cost is shown in a comparison of Comprehensives H and I English costs. Both schools had approximately the same average teacher's salary in the English area, but Comprehensive I had a higher general preparation cost ratio than Comprehensive H. Because of the average class size of 28 in Comprehensive H and 33 in Comprehensive I, the English program in Comprehensive H was $23.00 higher per student than in Comprehensive I. Sixteen dollars of this amount was made up by student-teacher ratio, and the remaining seven dollars was the result of differences in course time: 780 minutes per week in Comprehensive I and 804 minutes per week in Comprehensive H.

Direct Instructional Costs: Division IV, Grade XI

Direct instructional costs for Grade XI students, based on per student course-enrollment are presented in Table VI. This Table reports the cost of students in each course within each program exactly as the courses were instructed in the comprehensives. The total course offering in Grade XI was 180 courses, an increase of 56 courses over the Grade X course offering.

Table VII presents the range of minimum and maximum course direct instructional costs, based on per student course-equivalent costs, on a one credit basis. A marked increase in the unit course cost in the vocational technical area was noted. This resulted from an increased number of course

TABLE VI

GRADE ELEVEN DIRECT INSTRUCTIONAL COSTS PER STUDENT-COURSE ENROLMENT IN THE COMPREHENSIVE SCHOOLS

Course	Credit	A		B		C		D		E		F	
		Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost
CHRISTIAN ETHICS													
Christian Ethics 20	1												
Total													
ENGLISH													
English 20	2	222	56.67			137	57.43			269	74.77	285	62.45
Composition 20	1			166	34.32			170	29.41				
Literature 20	1			178	43.36			189	31.37				
English 20 Honors	2											24	58.50
English 20 Special	2											20	99.19
English 22	2												
Enriched Literature	1												
General English	2												
Trade English	2												
Total		222	56.67	344	39.00	137	57.43	359	30.44	269	74.77	329	64.40
FINE ARTS													
Art 20	1			24	76.69					31	68.56	48	44.51
Art Met-Weld 20	1												
Drama 20	1	40	21.90	9	147.73								
Drama 10-11-12	1												
Music 20	1	20	127.19										
Choral Music 20	1												
Music Vocal 20	1												
Band 20	1			7	86.55								
Choral 20	1												
Music N/C	0												
Music 22	1												
Total		60	57.00	40	94.40					31	68.56	48	44.51

TABLE VI

GRADE ELEVEN DIRECT INSTRUCTIONAL COSTS PER STUDENT-COURSE ENROLMENT IN THE COMPREHENSIVE SCHOOLS

Course	Credit	G Course Enrolment	G Per Student Course Enrolment Cost	H Course Enrolment	H Per Student Course Enrolment Cost	I Course Enrolment	I Per Student Course Enrolment Cost	J Course Enrolment	J Per Student Course Enrolment Cost	K Course Enrolment	K Per Student Course Enrolment Cost
CHRISTIAN ETHICS											
Christian Ethics 20	1	353	27.29								
Total		353	27.29								
ENGLISH											
English 20	2	334	48.43	378	96.02	402	85.32			294	90.64
Composition 20	1							410	37.27		
Literature 20	1							396	33.98		
English 20 Honors	2										
English 20 Special	2										
English 22	2	52	56.30								
Enriched Literature	1							19	67.16		
General English	2									44	100.74
Trade English	2									55	85.54
Total		386	49.49	378	96.02	402	85.32	825	36.38	392	91.06
FINE ARTS											
Art 20	1	38	69.22	58	75.93			60	79.53	54	47.77
Art Met-Weld 20	1					50	75.47				
Drama 20	1	6	212.34					24	47.40		
Drama 10-11-12	1							19	73.56		
Music 20	1			20	60.02					11	21.58
Choral Music 20	1							7	78.04		
Music Vocal 20	1							14	72.77		
Band 20	1					42	22.16				
Choral 20	1					110	17.01				
Music N/C	0							18	52.12	26	27.08
Music 22	1									9	24.45
Total		44	88.74	78	71.85	202	32.55	142	69.03	100	37.41

TABLE VI (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost
HOME ECONOMICS													
Home Economics 20	1	15	42.15					24	86.10				
Clothing Advanced	0.5			45	22.84	35	30.40			49	58.06	16	34.26
Family Life 20	0.5			11	32.02								
Foods 20	0.5			44	20.39					40	66.97	15	39.10
Housing Int. Design 20	0.5					44	24.18			27	52.69	18	30.45
Personal Economics 20	0.5			22	12.31	79	22.64			9	99.21	15	39.10
Total		15	42.15	122	20.89	158	24.79	24	86.10	125	62.71	64	35.45
MATHEMATICS													
Algebra 20		196	52.26	156	32.86	108	34.63	139	33.54	264	51.01	272	35.26
Algebra 20 Honors	1											25	48.46
Algebra 20 Special	1											51	50.07
Algebra 20 Modified	1												
General Math 20	1			199	37.00			48	40.09				
Trade Math 21	1												
Commercial Math 21	1					24	43.66						
Geometry 20	1	39	51.67	68	41.11	25	41.63	124	29.02	66	48.76	161	38.60
Geometry 20 Honors	1											25	49.88
Geometry 21 Special	1											19	65.22
Geometry Trad. 21	1												
Computer Science 20	1												
Computer Sc. Hon. 20	1											19	62.64
Total		235	52.16	293	35.84	157	37.12	311	32.74	330	50.56	572	40.64
MODERN LANGUAGES													
French 20	1	109	32.14	53	37.31	61	46.81	83	26.98	62	41.61	243	48.55
Enriched French 20	1												
French 20 Honors	1											16	48.19
French Oral 20	1									25	42.05		
French Par. Fr. 20	1									21	95.08		
German 20	1												
Latin 20	1									9	136.78		
Ukrainian 20	1												
Total		109	32.14	53	37.31	61	46.81	83	26.98	117	58.62	259	48.52

TABLE VI (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost
HOME ECONOMICS											
Home Economics 20	1	39	124.37			40	97.70			10	110.16
Clothing Advanced	0.5			44	29.22			43	37.05		
Family Life 20	0.5			34	27.41			49	32.99		
Foods 20	0.5			62	29.66			15	70.13		
Housing Int. Design 20	0.5			34	27.59			22	47.98		
Personal Economics 20	0.5										
Total		39	124.37	174	28.71	40	97.70	129	41.22	10	110.16
MATHEMATICS											
Algebra 20		234	39.59	277	50.33	315	40.06	338	38.67	314	41.91
Algebra 20 Honors	1										
Algebra 20 Special	1										
Algebra 20 Modified	1					22	65.71				
General Math 20	1	35	41.47			87	65.67	73	54.36		
Trade Math 21	1									43	59.80
Commercial Math 21	1										
Geometry 20	1	138	49.98	115	44.07	102	52.53	61	65.74	29	39.18
Geometry 20 Honors	1										
Geometry Special 21	1										
Geometry Trad. 21	1			55	49.56						
Computer Science 20	1	25	43.62							26	26.80
Computer Sc. Hon. 20	1										
Total		432	43.29	451	49.59	526	47.78	472	44.59	412	42.63
MODERN LANGUAGES											
French 20	1	108	63.62	163	46.23	150	68.57	148	44.50	156	40.48
Enriched French 20	1										
French 20 Honors	1										
French Oral 20	1										
French Par. Fr. 20	1	17	62.68								
German 20	1	7	101.95			15	72.12	31	72.13	11	66.44
Latin 20	1										
Ukrainian 20	1	8	121.15							24	22.95
Total		140	68.71	163	46.23	165	68.89	199	50.38	191	39.77

TABLE VI (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
PHYSICAL EDUCATION													
Physical Ed. 20	1			28	47.33	13	79.74	21	19.31	63	43.67		
Physical Ed. N/C	0			151	18.46	115	28.25	181	19.53				
Special Phy. Ed 20	1												
Total				179	22.97	128	33.48	202	19.52	63	43.67		
SCIENCE													
General Science 20	1												
Biology BSCS 20	1	127	53.27	123	28.36	83	43.70	129	39.43	235	52.41	198	63.72
Bio. BSCS Hon. 20	1											26	55.51
Chemistry 20	1	33	81.20										
Bio. BSCS Special	1											22	70.29
Chem Study 20	1	88	58.41	109	41.14	82	42.16	112	34.94	164	57.48	201	32.05
Enriched Chem Study	1												
Chem Study Spec. 20	1											65	41.90
Physics PSSC 20	1	103	66.91	58	39.95	27	49.39	63	31.74	83	76.25	202	47.69
Modified Physics 21	1												
Trade Physics 21	1												
Phys. Trad. 21	1			50	52.07	32	40.63						
Total		351	61.19	340	37.92	224	43.39	304	36.18	482	58.24	714	48.19
SOCIAL STUDIES													
Social Studies 20	1	236	40.04	171	41.57	122	43.45	157	41.17	291	43.19		
Gen. Soc. St. 21	1												
History 20	1											320	68.80
History 20 Special	1											19	103.42
Economics 20	1	23	60.53										
Geography 20	1	20	54.23	26	76.53	59	33.39	56	28.39	77	39.76	22	41.92
Psychology 20	1	57	33.82										
Soc. St. 22	1												
Total		336	41.23	197	46.18	181	40.17	213	37.81	328	44.60	361	68.97

TABLE VI (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
PHYSICAL EDUCATION											
Physical Ed. 20	1	39	83.61	113	45.84	67	73.90	73	87.32	77	70.22
Physical Ed. N/C	0							37	40.12		
Special Phys. Ed.20	1									33	84.49
Total		39	83.61	113	45.84	67	73.90	110	71.44	110	74.50
SCIENCE											
General Science 20	1									30	33.13
Biology BSCS 20	1	178	37.58	131	47.28	211	57.36	274	40.84	215	41.07
Biology BSCS Hon. 20	1										
Chemistry 20	1										
Bio. BSCS Spec.	1										
Chem Study 20	1	146	50.14	140	36.22	228	39.42	202	41.72	214	52.38
Enriched Chem Study	1							30	40.10		
Chem Study Spec. 20	1										
Physics PSSC 20	1	111	45.05	120	52.29	198	49.01	125	35.11	146	42.46
Modified Physics 21	1										
Trade Physics 21	1									54	56.21
Physics Trad. 21	1							20	54.69		
Total		435	43.71	391	44.86	637	48.34	651	40.41	659	45.93
SOCIAL STUDIES											
Social Studies 20	1	296	35.68	372	48.88	351	44.82	251	48.89	271	46.76
General Social St. 21										82	51.15
History 20	1										
History 20 Special	1										
Economics 20	1										
Geography 20	1	35	32.24	58	44.92	91	59.16	21	47.74	85	45.07
Psychology 20	1									202	39.25
Soc. St. 22	1	49	60.24								
Total		380	38.52	430	48.34	442	47.77	272	48.80	640	44.73

TABLE VI (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
AGRICULTURE													
Ag. Farm Mach 20	1			11	66.94								
Ag. Mechanics 20	1			12	56.76								
Ag. Tech. 2/20	1			12	56.76								
Ag. Tech 3/20	1												
Voc. Ag. 20	1	7	441.07										
Total		7	441.07	35	59.96								
BUSINESS EDUCATION													
Accounting 20	1												
Bookkeeping 20	1	38	56.21	5	136.14	15	52.52	25	23.55	46	47.16	35	65.70
Shorthand 29	1.5												
Business Eng. 20	1												
Business Law 20	1	12	116.01										
Business Mach. 20	1	33	37.31			28	17.71	23	26.97				
Bus. Mach & Math 26	1			20	28.50					24	23.64		
Business Math 26	1												
Cal Mach & Math 27	1												
Data Processing	0.5												
Business Records 26	1			7	98.49								
Communication 26	1									27	32.14		
Consumer Econ 20	1												
Data Processing 26	1												
Employee Rel. 26	0.5									19	30.96		
Key Punch 26	0.5									24	54.83		
Merchandizing 26	1	11	67.91	13	96.88					18	129.67	22	36.29
Office Practice 26	1	40	58.51										
Office Procedure 26	1			17	50.20			15	27.66				
Off Proc & Com 26	1												
Shorthand 20	1	39	47.48			19	66.46					23	83.80
Shorthand 25/26	1			10	85.34			18	31.82				
Shorthand 26A	1												
Typing 20	1	108	48.77			57	33.92			71	32.76	114	24.34
Typing 26	1			27	69.89			38	53.67				

TABLE VI (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
AGRICULTURE											
Ag. Farm Mach 20	1									7	178.95
Ag. Mechanics 20	1							33	57.67	7	178.73
Ag. Tech 2/20	1							23	80.21		
Ag. Tech 3/20	1							22	75.22		
Voc. Ag. 20	1									33	77.42
Total								78	69.27	47	107.63
BUSINESS EDUCATION											
Accounting 20	1	41	57.30								
Bookkeeping 20	1	3	193.66	58	38.27	25	55.16	52	48.84	24	37.89
Shorthand 29	1.5									15	79.11
Business Eng. 20	1					26	36.06				
Business Law 20	1			29	33.09			104	34.68		
Business Mach. 20	1					31	80.69	128	23.54		
Bus. Mach & Math 26	1	17	69.85	52	58.48					80	49.35
Business Math 26	1							59	62.54		
Cal Mach. & Math 27	1	7	67.58								
Data Processing	0.5									32	14.21
Business Records 26	1										
Communication 26	1							21	27.45		
Consumer Econ. 20	1	8	92.07								
Data Processing 26	1	40	38.03								
Employee Relations 26	0.5									32	14.21
Key Punch 26	0.5										
Merchandizing 26	1					23	59.96	51	42.95	45	46.83
Office Practice 26	1										
Office Procedure 26	1	13	78.48			26	35.37				
Off. Proc. & Com 26	1			51	46.64						
Shorthand 20	1			38	76.08			40	41.21		
Shorthand 25/26	1	50	31.87			35	26.79				
Shorthand 26A	1	29	47.99								
Typing 20	1	41	51.17	115	42.68			91	28.30	105	32.68
Typing 26	1	54	27.33			62	45.60				

TABLE VI (Continued)

Course	Credit	A Course Enrolment	A Per Student Course Enrolment Cost	B Course Enrolment	B Per Student Course Enrolment Cost	C Course Enrolment	C Per Student Course Enrolment Cost	D Course Enrolment	D Per Student Course Enrolment Cost	E Course Enrolment	E Per Student Course Enrolment Cost	F Course Enrolment	F Per Student Course Enrolment Cost
Business Ed. Con't													
Typing 27	1									10	117.50		
Typing 28	1												
Typing & Off Pract 26	1												
Consumer Econ. 22	1												
Total		281	53.26	99	68.62	119	37.65	119	35.60	239	47.46	194	40.21
COMMERCIAL COOKING													
Comm. Cooking 20.24	1	15	114.98							5	97.11		
Comm Cooking 2-3-4	3												
Food Services 20	1					3	80.71						
Food Services 24	1												
Total		15	114.98			3	80.71			5	97.11		
COSMETOLOGY													
Beauty Culture 22	3												
Beauty Culture 21	1.5												
Beauty Culture 22/24	1	23	164.04										
Cosmetology 20/24	3												
Cosmetology 2-3-4	3												
Cosmetology 22	3												
Total		23	164.04										
DRAFTING													
Drafting 20/24	1	29	175.75	13	41.87			16	67.98				
Drafting 21	1												
Drafting 23	1												
Draft. Tech. 22	3												
Draft. Tech 21	1.5												
Drafting 23	3			4	398.31								
Drafting Tech 23	1					20	103.63			4	383.04		
Draft Tech or Trade 21	1												
Draft Tech or Trade 22	1												

TABLE VI (Continued)

Course	Credit	G Course Enrol-ment	G Per Student Course Enrol ment Cost	H Course Enrol-ment	H Per Student Course Enrol ment Cost	I Course Enrol-ment	I Per Student Course Enrol ment Cost	J Course Enrol-ment	J Per Student Course Enrol ment Cost	K Course Enrol-ment	K Per Student Course Enrol ment Cost
Business Ed. Con't											
Typing 27	1	4	54.38								
Typing 28	1	1	111.04								
Typing & Off Pract 26	1					12	76.62				
Consumer Econ 22	1	3	92.35								
Total		311	48.34	343	47.81	240	49.17	546	36.33	333	37.51
COMMERCIAL COOKING											
Comm Cook. 20/24	1										
Comm Cook. 2-3-4	3							18	129.68		
Food Services 20	1	25	75.24	31	37.75						
Food Services 24	1					7	113.18				
Total		25	75.24	31	37.75	7	113.18	18	129.68		
COSMETOLOGY											
Beauty Culture 22	3									15	287.04
Beauty Culture 21	1.5									1	284.02
Beauty Culture 22/24	1										
Cosmetology 20/24	3	6	137.73								
Cosmetology 2-3-4	3							30	113.36		
Cosmetology 22	3	6	137.73								
Total		12	137.73					30	113.36	16	286.85
DRAFTING											
Drafting 20/24	1	13	76.94								
Drafting 21	1	18	103.07								
Drafting 23	1					28	48.18				
Draft Tech. 22	3									2	245.92
Draft Tech 21	1.5									1	123.93
Drafting 23	3										
Drafting Tech 23	1							22	43.22		
Draft Tech or Trade 21	1			16	181.82						
Draft Tech or Trade 22	1			17	153.08						

TABLE VI (Continued)

Course	Credit	A Course Enrol-ment	A Per Student Course Enrol ment Cost	B Course Enrol-ment	B Per Student Course Enrol ment Cost	C Course Enrol-ment	C Per Student Course Enrol ment Cost	D Course Enrol-ment	D Per Student Course Enrol ment Cost	E Course Enrol-ment	E Per Student Course Enrol ment Cost	F Course Enrol-ment	F Per Student Course Enrol ment Cost
Drafting Con't													
Draft Voc. 1-2-3	3												
Related Draft 20	1												
Drafting Trade	1.5												
Total		29	175.75	17	125.74	20	103.63	16	67.98	4	383.04		
ELECTRICITY													
Electricity 20	1					14	56.90						
Electronics 20/24	1	17	299.81										
Electronics 21	1												
Electron. Radio 24	3			7	317.71								
Electron. Tech 23	1												
Electron. Voc. 1	2												
Electron. Voc. 2	1												
Electricity 24	1	12	160.63										
Electrical Elect 23	1							25	75.81	12	98.03		
El-Elect Trade 23	3												
El-Elect Tech 23	1.5												
El-Elect Tech 23	3												
Electrical Power 24	3			2	1045.45								
Electrical Tech 24	1					4	199.15						
Electrical Tech 2	1												
Electrical Tech 3	1												
Elect Voc. 1	2												
Total		29	242.22	9	479.43	18	88.51	25	75.81	12	98.03		
MECHANICAL													
Automotives 1	1												
Automotives 1-2	2												
Automotives 20	1												
Automotives 21	1												
Automotives 24	2	34	106.15										
Automotives 24	3			12	233.91								
Automotives Trade 23	3												

TABLE VI (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
Drafting Con't											
Draft Voc. 1-2-3	3							12	97.92		
Related Draft 20	1									32	106.74
Drafting Trade	1.5									1	1128.00
Total		31	92.11	33	167.01	28	48.18	34	62.53	36	143.32
ELECTRICITY											
Electricity 20	1										
Electronics 20/24	1	24	49.22								
Electronics 21	1	14	84,37								
Electron. Radio 24	3										
Electron. Tech 23	1					12	136.30				
Electron Voc. 1	2							4	158.23		
Electron Voc. 2	1							4	158.23		
Electricity 24	1										
Electrical Elect 23	1										
El-Elect Trode 23	3									9	916.54
El-Elect Tech 23	1.5									1	442.91
El-Elect Tech 23	3									2	455.68
Electrical Power 24	3										
Electricol Tech 24	1			29	99.69						
Electrical Tech 2	1							17	55.75		
Electricol Tech 3	1							6	55.62		
Elect Voc. 1	2							7	67.05		
Totol		38	62.17	29	99.69	12	136.30	38	77.38	12	800.26
MECHANICAL											
Automotives 1	1							62	77.22		
Automotives 1-2	2							10	225.56		
Automotives 20	1	12	119.21								
Automotives 21	1	17	84.15								
Automotives 24	2										
Automotives 24	3										
Automotive Trode 23	3									32	141.97

TABLE IV (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
Mechanical Con't													
Motor Mech. 23	1					29	57.21	41	48.56				
M.V.M.R. 24	1									51	44.99		
M.V.M.R. 25	2												
Mech. Tech. 23	1												
Mech. Tech. 23	1.5												
Mech. Tech. 23	3												
Mech Tech. 24	2	25	172.46										
Mech. Tech. 2	1												
Machine Shop 24	3												
Mach. Shop Trade 24	1									6	127.48		
Mach. Shop Trade 24	1.5												
Mach. Shop Trade 24	3			4	361.27								
Machine Tools 1	1												
Machine Tools 2	1												
Machining 24	2												
Material Testing 22	2												
Metal 24	1					8	131.42						
Metal Working 20	1												
Welding 1/20/24	1							31	52.62				
Welding 2/21	1												
Welding 24	2												
Welding Trade 23	1.5												
Welding Trade 23	3												
Weld & Fabric 24	3			3	317.69								
Total		59	134.25	12	390.21	37	73.25	41	48.56	88	53.31		
STRUCTURAL													
Construction 20	1					8	131.42	13	79.41				
Construction 21	1												
Const-Bldg. 24	1												
Const. Bldg. 24	3			2	947.04								
Const. Tech. 23	1												
Const. Tech 24	1.5												

TABLE VI (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
Mechanical Con't											
Motor Mech. 23	1										
M.V.M.R. 24	1			9	92.34	58	72.19				
M.V.M.R. 25	2			13	93.48						
Mech. Tech. 23	1			46	84.22	17	186.62				
Mech. Tech. 23	1.5									1	107.65
Mech. Tech. 23	3									17	165.90
Mech. Tech. 24	2										
Mech. Tech. 2	1							5	113.75		
Machine Shop 24	3										
Mach. Shop Trade 24	1										
Mach. Shop Trade 24	1.5									1	107.65
Mach. Shop Trade 24	3									7	121.58
Machine Tools 1	1							35	52.08		
Machine Tools 2	1							15	66.97		
Machining 24	2			16	82.37						
Material Testing	2			27	76.59						
Metal 24	1										
Metal Working 20	1	15	91.96								
Welding 1/20/24	1	13	220.08			9	67.20	66	72.19		
Welding 2/21	1	10	143.05					32	53.77		
Welding 24	2			36	92.51						
Welding Trade 23	1.5									3	199.89
Welding Trade 23	3									7	495.45
Weld & Fabric. 24	3										
Total		67	127.34	147	85.96	84	94.82	225	75.22	68	183.79
STRUCTURAL											
Construction 20	1	9	129.80								
Construction 21	1	7	166.89								
Const. - Bldg. 24	1			5	280.58						
Const. Bldg. 24	3										
Const. Tech. 23	1					12	332.31				
Const. Tech 24	1.5									5	149.64

TABLE VI (Continued)

Course	Credit	A Course Enrol-ment	A Per Student Course Enrol ment Cost	B Course Enrol-ment	B Per Student Course Enrol ment Cost	C Course Enrol-ment	C Per Student Course Enrol ment Cost	D Course Enrol-ment	D Per Student Course Enrol ment Cost	E Course Enrol-ment	E Per Student Course Enrol ment Cost	F Course Enrol-ment	F Per Student Course Enrol ment Cost
Structural Con't													
Const. Tech. 24	2												
Const. Tech. 24	3												
Const. Voc. 1	1												
Const. Voc. 2	1												
Const. Tech. 2-3	2												
Const. Trade	3												
Const. Voc. 24	1									3	464.29		
Total				2	947.04	8	131.42	13	79.41	3	464.29		
GENERAL													
Rel Draft Arch. 20	1												
Total													
MEDIA													
Graphic Arts 24	1												
Total													
TECHNOLOGY													
Technology 23	2											28	257.31
Total												28	257.31
VOCATIONAL A													
Special Ed. Academic													
Special Ed. Agric.													
Special Ed. Auto													
Special Ed. Beauty Cult.													
Special Ed. Home Ec.													
Special Ed. Typing													
Total													

TABLE VI (Continued)

Course	Credit	G Course Enrol-ment	G Per Student Course Enrol ment Cost	H Course Enrol-ment	H Per Student Course Enrol ment Cost	I Course Enrol-ment	I Per Student Course Enrol ment Cost	J Course Enrol-ment	J Per Student Course Enrol ment Cost	K Course Enrol-ment	K Per Student Course Enrol ment Cost
Structural Con't											
Const. Tech. 24	2			13	101.68						
Const. Tech. 24	3									5	198.60
Const. Voc. 1	1							15	74.54		
Const. Voc. 2	1							10	111.81		
Const. Tech 2-3	2							6	261.81		
Const. Trade	3									18	173.43
Const. Voc. 24	1										
Total		16	146.02	18	151.38	12	332.31	31	122.80	28	173.68
GENERAL											
Rel Draft Arch. 20	1							8	139.76		
Total								8	139.76		
MEDIA											
Graphic Arts 24	1	14	106.06			36	82.28				
Total		14	106.06			36	82.28				
TECHNOLOGY											
Technology 23	2										
Total											
VOCATIONAL A											
Special Ed. Academic										74	67.33
Special Ed. Agric										32	39.92
Special Ed. Auto										34	190.15
Special Ed. Beauty Cult.										26	66.49
Special Ed. Home Ec.										14	60.53
Special Ed. Typing										12	45.03
Total										198	83.33

TABLE VII

DIRECT INSTRUCTIONAL PER STUDENT-COURSE EQUIVALENT UNIT COST MAXIMUM, MINIMUM RANGE AND AVERAGE UNIT COST BY CURRICULAR PROGRAM FOR POPULATION COMPREHENSIVES

Grade Eleven

Curricular Program	Course Unit Cost Range		Average Course Unit Cost
	Maximum	Minimum	
Christian Ethics	24.29	24.29	24.29
English[a]	49.49	95.90	71.53
Fine Arts	37.41	94.90	62.67
Home Economics	41.78	124.37	80.73
Mathematics	32.74	52.16	43.12
Modern Languages	26.98	68.71	46.39
Physical Education	19.52	83.61	52.70
Science	36.18	61.19	46.21
Social Studies	37.81	68.97	46.05
Agriculture	56.76	441.07	148.74
Business Education	31.77	68.62	45.10
Commercial Cooking	37.75	113.18	79.72
Cosmetology	37.79	164.04	87.32
Drafting	34.54	167.01	88.93
Electrical	62.17	279.06	118.54
General	139.76	139.76	139.76
Mechanical	48.56	159.81	82.68
Media	82.28	106.05	94.17
Structural	79.41	464.29	194.24
Technology	128.57	128.57	128.57
Vocational A	83.33	83.33	83.33

[a] Based on two credits

offerings in these curricular programs, and lower student enrollments per course.

Structural, general and technology, continued in the high cost range with each curricular program cost being increased. Agriculture and electrical technology moved from the mid to the high cost range, and media technology moved from the low cost range to the high cost range. The middle cost range courses continued to be home economics and English in the academic subjects, and commercial cooking, mechanical in the vocational-technical curricular areas. Fine arts, drafting and cosmetology became middle range cost courses as a result of decreased enrollment and an increase in course offerings in drafting. The high enrollment classes of mathematics, modern languages, physical education, science and social studies remained in the low range cost courses, although the direct instructional unit course cost for each was increased over Grade X.

Direct Instructional Costs: Division IV, Grade XII

Table VIII presents the direct instructional per student-course unit cost for the Grade XII area. A total of 165 courses were offered. Various technical vocational programs were dropped by some comprehensives at the Grade XII level. These were drafting, in Comprehensives D and E; electrical and mechanical, in Comprehensive E; and structural in Comprehensive J.

The cost pattern established in grade XI was continued in Grade XII with the course cost of all curricular areas increasing in Grade XII with the exception of agriculture, cosmetology, drafting, and media, as shown in Table IX.

TABLE VIII

GRADE TWELVE DIRECT INSTRUCTIONAL COSTS PER STUDENT-COURSE ENROLMENT IN THE COMPREHENSIVE SCHOOLS

Course	Credit	A		B		C		D		E		F	
		Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost
CHRISTIAN ETHICS													
Christian Ethics 30	1												
Total													
ENGLISH													
English 30	2	199	65.49			139	44.84					287	84.95
Composition 30	1			180	39.00			127	39.37	203	31.43		
Literature 30	1			179	37.73			137	34.85	208	72.22		
English 30 Honors	2											17	237.88
English 30 Special	2											32	98.44
Hist. of Eng. Lit 30	1												
Modified Comp. 31	1												
Modified Lit. 31	1												
General English 30	2												
Trade English 31	2												
Total		199	65.49	359	38.36	139	44.84	364	35.08	411	45.70	336	93.96
FINE ARTS													
Drama 30	1			11	88.74								
Art 30	1			11	96.07							21	71.47
Art 30 Honors	1											17	37.39
Music 30	1	18	127.37										
Band 30	1			7	86.55								
Total		18	127.37	29	91.00							38	56.23

TABLE VIII

GRADE TWELVE DIRECT INSTRUCTIONAL COSTS PER STUDENT-COURSE ENROLMENT IN THE COMPREHENSIVE SCHOOLS

Course	Credit	G		H		I		J		K	
		Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost	Course Enrolment	Per Student Course Enrolment Cost
CHRISTIAN ETHICS											
Christian Ethics 30	1	270	25.11								
Total		270	25.11								
ENGLISH											
English 30	2			329	105.14	340	84.62			277	82.36
Composition 30	1	252	21.55					413	36.41		
Literature 30	1	257	35.36					420	37.87		
English 30 Honors	2										
English 30 Special	2										
Hist. of Eng. Lit. 30	1	12	122.60					10	166.48		
Modified Comp. 31	1	39	36.87								
Modified Lit. 31	1	42	57.05								
General English 30	2									45	117.26
Trade English	2									45	122.22
Total		602	32.93	329	105.14	340	84.62	843	38.68	317	92.96
FINE ARTS											
Drama 30	1										
Art 30	1	15	88.77	21	81.60	24	62.76			28	45.99
Art 30 Honros	1										
Music 30	1			25	48.01					16	22.16
Band 30	1					42	22.39				
Total		15	88.77	46	63.35	66	37.07			44	37.33

TABLE VIII (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
HOME ECONOMICS													
Home Economics 30	1	13	53.87					10	103.33				
Consumer (family) Ec 30	0.5			27	23.20							12	41.11
Clothing 2 (30)	0.5			20	29.20							17	34.50
Cloth & Textiles 30	0.5												
Family Relations	0.5					43	50.28					8	61.66
Advanced Foods 2 (30)	0.5			11	24.63	48	37.86					17	34.50
Foods and Cookery 30	0.5												
Hous & Int. Design 30	0.5			37	23.11								
Home Economics 31	2												
Total		13	53.87	95	24.59	91	43.77	10	103.33			54	39.39
MATHEMATICS													
Algebra 30	1	159	56.74	156	37.67	111	34.63	93	43.35	178	52.85	253	38.97
Algebra 30 Honors	1											26	44.30
Algebra 30 Special	1											57	47.73
Algebra Modified	1												
General Math	1							24	39.05				
Trade Math	1												
Geo-Trig. 30	1	128	47.23	137	33.75	91	34.31	91	44.07	130	40.95	241	35.97
Geo-Trig. Honors	1											20	70.72
Geo-Trig. Special	1											20	61.19
Computer Science	1												
Trigonometry	1												
Total		287	52.49	293	35.84	202	34.48	208	43.17	308	47.82	617	40.58
MODERN LANGUAGES													
French 30	1	127	36.91	57	32.29	51	52.63	56	43.39	79	55.18	199	54.09
French 30 Honors	1											18	89.84
German 30	1												
Latin 30	1									11	119.37		
Ukrainian 30	1												
Total		127	36.91	57	32.29	51	52.63	56	43.39	90	63.02	217	57.06

TABLE VIII (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
HOME ECONOMICS											
Home Economics 30	1									15	90.75
Consumer (family) Ec 30	0.5										
Clothing 2 (30)	0.5			4	40.66	8	102.63	9	117.28		
Cloth. & Textiles 30	0.5	15	111.78								
Family Relations	0.5			5	35.33	14	47.37	29	36.28		
Advanced Foods 2 (30)	0.5			5	48.52	20	33.16				
Foods and Cookery 30	0.5	6	173.04								
House & Int. Design 30	0.5			6	28.44	3	243.47				
Home Economics 31	2			18	123.19						
Total		21	129.29	38	78.16	45	63.95	38	55.46	15	90.75
MATHEMATICS											
Algebra 30	1	251	42.87	277	50.33	223	49.87	314	38.06	206	45.02
Algebra 30 Honors	1										
Algebra 30 Special	1										
Algebra Modified	1					20	78.12				
General Math	1	8	190.88			50	69.50	17	101.88		
Trade Math	1									33	80.86
Geo -Trig. 30	1	188	48.36	146	49.19	195	51.13	232	37.69	206	46.14
Geo-Trig. Honors	1										
Geo-Trig. Special	1										
Computer Science	1	10	132.19								
Trigonometry	1			28	44.40					58	47.89
Total		251	47.15	451	49.59	488	53.54	563	39.83	445	48.20
MODERN LANGUAGES											
French 30	1	128	54.14	112	50.19	150	68.57	133	40.32	146	45.43
French 30 Honors	1										
German 30	1	3	101.95			15	72.12	31	38.81	8	66.38
Latin 30	1										
Ukrainian 30	1	2	121.15							11	50.07
Total		133	56.23	112	50.19	165	68.89	164	40.04	165	46.75

TABLE VIII (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
PHYSICAL EDUCATION													
Physical Education	1			26	50.03	8	129.57	23	19.70	28	47.28		
Physcial Ed. N/C	0			81	27.06	113	29.69	138	19.01				
Physical Ed Special 39	1												
Total				107	32.64	121	36.29	161	19.01	28	47.28		
SCIENCE													
Biology BSCS 30	1	93	61.62	105	34.76	71	52.89	99	53.22	180	56.98	135	72.34
Biology Traditional 30	1	21	50.95			16	92.66					18	107.08
Biology 30 Honors	1											17	109.45
Biology 30 Special	1											15	124.53
Chem Study 30	1	113	58.26	105	44.89	73	46.56	84	35.08	155	51.38	159	67.89
Chem Study Honors 30	1											31	53.31
Chem Study Special 30	1											46	88.00
PSSC 30	1	129	76.84	46	54.49	24	51.40	25	56.52	57	87.28	104	75.71
PSSC 30 Special	1											28	70.85
Physics Traditional	1			35	37.99	31	43.02	9	110.59				
Chemistry 30	1												
Trade Physics 30	1												
Physics PSSC Honors 30	1											19	98.63
Total		356	64.70	291	41.92	215	52.10	217	48.95	392	59.17	572	76.31
SOCIAL STUDIES													
Social Studies 30	1	226	49.79	168	43.51	124	45.82	100	36.00	183	49.77		
Soc. Stud. Modif. 31	1												
General Soc. Sts. 30	1												
History 30	1											296	61.46
History 30 Special	1											27	51.40
Economics 30	1	17	85.92	31	67.21	104	34.29	32	26.30	79	51.19	114	46.84
Geography 30	1	19	60.79	22	60.43			34	23.23	44	55.52		
Geology 30	1												

TABLE VIII (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
PHYSICAL EDUCATION											
Physical Education	1	36	78.87	80	43.28	44	91.02	26	78.58	28	88.20
Physical Ed. N/C	0										
Physical Ed. Special 39	1									12	116.17
Total		36	78.87	80	43.28	44	91.02	26	78.58	40	96.59
SCIENCE											
Biology BSCS 30	1	167	39.39	186	48.85	214	59.75	216	42.40	168	45.34
Biology Traditional 30	1	21	48.27	22	55.68	58	32.06				
Biology 30 Honors	1										
Biology 30 Special	1										
Chem Study 30	1	119	52.08	179	39.75	240	62.11	181	46.01	166	52.76
Chem Study Honors 30	1										
Chem Study Special 30	1										
PSSC 30	1	67	109.99	126	65.85	125	60.63	98	42.24	122	43.52
PSSC 30 Special	1										
Physics Traditional	1							14	78.12		
Chemistry 30	1							18	72.16		
Trade Physics 30	1									30	103.97
Physics PSSC Honors 30	1										
Total		374	56.76	513	50.14	637	58.29	527	45.58	486	51.04
SOCIAL STUDIES											
Social Studies 30	1	280	42.12	340	44.87	286	56.79	351	47.18	248	43.95
Soc. Stud. Modif 31	1	44	46.61								
General Social Sts. 30	1									28	47.07
History 30	1										
History 30 Special	1										
Economics 30	1	66	51.69	59	43.55	70	41.71	105	32.63		
Geography 30	1	18	84.84	12	125.72	55	48.94				
Geology 30	1	14	112.26								

TABLE VIII (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
Social Studies Con't													
Psychology 30	1	52	28.50										
Psyc. and Fam. Life	1												
Total		314	48.88	227	49.01	228	40.56	166	31.51	306	50.96	437	57.02
AGRICULTURE													
Ag. Farm Machinery 30	1			5	147.27	5	174.58						
Ag. Mech. 30	1			6	122.73	5	169.12						
Ag. Tech. 38	1			5	147.27	5	169.12						
Ag. Tech. 4	1												
Ag. Tech. 5	1												
Voc. Agriculture 38	2	6	445.97										
Farm Machinery 38	0.5												
Total		6	445.97	16	138.07	15	170.94						
BUSINESS EDUCATION													
Accounting 30	1												
Bookkeeping 30	1	11	92.32	3	136.14	9	73.34	17	37.50	20	56.82	14	64.87
Business Economics 30	1												
Business English 30	1												
Business Law 30	1												
Business Machines 30	1	22	57.98										
Bus. Mach. & Math 36	1			27	61.45	14	71.48						
Bus. Management 36	1			26	41.89								
Bus. Org. & Manag.30	1	20	73.03										
Data Processing 36	1												
Merchandizing 36	1	33	53.41	4	142.50							6	36.09
Office Practice 30	1	31	75.66										
Office Procedures 37	1			25	34.14			8	27.82	24	34.74	7	196.68
Office Proc. & Com 30	1												
Shorthand (2) 36	1	14	67.34	15	56.89	7	184.23						

TABLE VIII (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
Social Studies Con't											
Psychology 30	1										
Psyc. and Fam. Life	1									82	48.15
Total		422	48.29	411	47.03	411	53.16	456	43.83	359	45.15
AGRICULTURE											
Ag. Farm Machinery 30	1							16	53.71		
Ag. Mech. 30	1										
Ag. Tech. 38	1										
Ag. Tech. 4	1							15	109.97		
Ag. Tech. 5	1							17	86.81		
Voc. Agriculture 38	2									15	157.21
Farm Machinery 38	0.5									5	126.75
Total								48	83.02	20	149.60
BUSINESS EDUCATION											
Accounting 30	1	20	58.10								
Bookkeeping 30	1			52	70.03	19	72.37	21	57.54		
Business Economics 30	1									50	40.09
Business English 30	1					14	118.16				
Business Law 30	1									21	21.56
Business Machines 30	1					16	82.77				
Bus. Mach & Math 36	1	11	152.92	42	72.40					28	54.51
Bus. Management 36	1							26	26.31		
Bus. Org. & Manag. 30	1									24	46.33
Data Processing 36	1	18	43.11	42	72.40						
Merchandizing 36	1					13	105.77	11	324.49	20	54.03
Office Practice	1										
Office Procedures 37	1	25	136.45			27	34.06	37	34.80	21	19.86
Office Proc & Com 30	1			46	39.40						
Shorthand (2) 36	1	6	231.93	38	58.35	15	110.28	16	103.03		

TABLE VIII (Continued)

Course	Credit	A Course Enrol-ment	A Per Student Course Enrol ment Cost	B Course Enrol-ment	B Per Student Course Enrol ment Cost	C Course Enrol-ment	C Per Student Course Enrol ment Cost	D Course Enrol-ment	D Per Student Course Enrol ment Cost	E Course Enrol-ment	E Per Student Course Enrol ment Cost	F Course Enrol-ment	F Per Student Course Enrol ment Cost
Business Education Con't													
Shorthand 39	1.5									14	132.45	9	220.41
Shorthand 3	1												
Typing 3	1												
Typing 30	1	46	47.37							77	60.34	39	35.30
Typing 36	1			34	64.58			5	42.84				
Typing & Off. Pract	1					10	117.10						
Spec. Com. Commun.	1												
S.C. Business English	1					12	89.37						
S.C. Bookkeeping	1					12	83.39						
S.C. Bus Mach & Math	1					13	75.34						
S.C. Data Proc.	1												
S.C. Office Prac.	1												
S.C. Off. Prac & Com	1												
S.C. Shorthand	1					15	112.84						
S.C. Typing	1					13	99.20						
S.C. Machine Trans.	1									12	88.91		
Total		177	62.04	134	56.93	105	96.73	30	35.81	147	46.88	75	78.16
COMMERCIAL COOKING													
Comm Cooking 34	1	8	215.35										
Comm Cooking 5-6-7	3												
Food Services 30	1					3	80.71						
Total		8	215.35			3	80.71						
COSMETOLOGY													
Beauty Culture 32/34	3	19	198.57										
Com Ed Beauty Cult 39	0									27	21.41		
Cosmetology 30	1												
Cosmetology 5-6-7	3												
Total		19	198.57							27	21.41		

TABLE VIII (Continued)

Course	Credit	G Course Enrolment	G Per Student Course Enrol ment Cost	H Course Enrolment	H Per Student Course Enrol ment Cost	I Course Enrolment	I Per Student Course Enrol ment Cost	J Course Enrolment	J Per Student Course Enrol ment Cost	K Course Enrolment	K Per Student Course Enrol ment Cost
Business Education Con't											
Shorthand 39	1.5									27	97.89
Shorthand 3	1							19	38.79		
Typing 3	1							68	48.48		
Typing 30	1	27	28.74	88	56.19					58	29.21
Typing 36	1	14	53.23			28	32.84				
Typing & Off. Pract.	1										
Special Com. Commun.	1									47	61.89
S.C. Business English	1					24	95.61				
S.C. Bookkeeping	1			52	42.99	19	69.70			24	46.33
S.C. Bus. Mach & Math	1			24	61.25	22	56.85			21	55.36
S.C. Data Proc.	1									23	15.50
S.C. Office Prac.	1					49	47.23			44	18.39
S.C. Off. Prac. & Com	1			43	29.48						
S.C. Shorthand	1			49	45.25	42	72.17			46	37.27
S.C. Typing	1			44	31.53	70	56.69			45	55.34
S.C. Machine Trans.	1										
Total		121	82.18	520	52.45	358	65.38	198	62.78	499	43.05
COMMERCIAL COOKING											
Comm. Cooking 34	1										
Comm Cooking 5-6-7	3							4	453.12		
Food Services 30	1			20	58.57						
Total				20	58.57			4	453.12		
COSMETOLOGY											
Beauty Culture 32/34	3									9	397.65
Com Ed Beauty Cult 39	0							7	125.00		
Cosmetology 30	1	20	68.70								
Cosmetology 5-6-7	3							24	176.76		
Total		20	68.70					31	165.07	9	397.65

TABLE VIII (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
DRAFTING													
Drafting 30/33	1			13	40.66								
Drafting 31	1												
Drafting 33	3			5	317.13								
Drafting 34	1	24	212.37										
Drafting Tech. 33	1					8	129.51						
Drafting Tech. 4	1												
Drafting Tech. 6	1												
Related Drafting	1												
Drafting Tech.31	1												
Drafting Trade 32	2												
Drafting Tech. 32	2												
Total		24	212.37	18	117.45	8	129.51						
ELECTRICAL													
Electronics Trade 33	3												
Electronics 34	2												
Electronics 30	1												
Electronics 31	1												
Electronics 34(Radio)	3			7	393.75								
Electricity 34.	2	7	194.35										
Elect. Electronics 33	1							16	65.54				
Elect-Electron Tech 33	1.5												
Elect-Electron Tech 33	3												
Elect Tech. 4	1												
Elect Tech. 6	1												
Elect Tech 34	1					5	159.32						
Elect Electron Trade 33	1.5					11	94.19						
Electronics 34	1	17	299.81										
Total		24	269.05	7	393.75	16	114.54	16	65.54				

TABLE VIII (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
DRAFTING											
Drafting 30/33	1	10	175.41			34	95.90				
Drafting 31	1	11	159.46								
Drafting 33	3	6	292.34								
Drafting 34	1										
Drafting Tech. 33	1										
Drafting Tech. 4	1							5	113.75		
Drafting Tech. 6	1							6	44.49		
Related Drafting	1									37	81.55
Drafting Tech. 31	1			38	82.84						
Drafting Trade 32	2			15	103.92						
Drafting Tech. 32	2									3	764.74
Total		27	194.90	53	88.80	34	95.90	11	75.97	40	132.78
ELECTRICAL											
Electronics Trade 33	3									9	916.54
Electronics 34	2			11	262.81						
Electronics 30	1	11	110.61								
Electronics 31	1	15	81.11								
Electronics 34 (Radio)	3										
Electricity 34	2										
Elect. Electronics 33	1										
Elect-Electran Tech 33	1.5									1	442.91
Elect-Electron Tech 33	3									2	455.68
Elect Tech. 4	1							6	183.06		
Elect Tech. 6	1							1	183.06		
Elect Tech. 34	1			21	122.48						
Elect Electran Trade 33	1.5										
Electronics 34	1					5	250.37				
Total		26	93.57	32	170.72	5	250.37	7	183.06	12	800.26

TABLE VIII (Continued)

Course	Credit	A		B		C		D		E		F	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
MECHANICAL													
Automotives 31	1												
Automotives 32	1												
Automotives 34	2	13	277.63										
Automotives 34	3			5	456.87								
Automotives 3-4	2												
Automotives Trade 33	3												
Motor Mechanics 33	1					30	55.30	17	46.86				
MVMR 34	1												
MVMR 34	2												
Automotives Trade 33	1												
Mech. Tech. 33	1												
Mech. Tech. 33	1.5												
Mech. Tech. 33	3												
Mech. Tech. 3-4	1												
Mech. Tech. 34	2	15	287.44										
Machining 34	2												
Machine Shop 34	3			4	361.27								
Machine Shop Trade 34	3												
Machine Tools 3-4	2												
Metal 34	1					8	135.80						
Metal Working 30	1												
Material Testing 32	2												
Welding 30/34	1												
Welding 31	1												
Welding 33	2												
Welding 3-4	2												
Welding 5	1												
Welding Trade 33	3												
Welding & Fabric 34	3			3	317.69								
Total		28	282.88	12	390.21	38	72.25	17	46.86				

TABLE VIII (Continued)

Course	Credit	G		H		I		J		K	
		Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost	Course Enrol-ment	Per Student Course Enrol ment Cost
MECHANICAL											
Automotives 31	1	16	92.04								
Automotives 32	1	15	98.17								
Automotives 34	2										
Automotives 34	3										
Automotives 3-4	2							26	197.06		
Automotives Trade 33	3									26	174.65
Motor Mechanics 33	1										
MVMR 34	1					8	133.44				
MVMR 34	2			17	173.33						
Automotives Trade 33	1										
Mech. Tech. 33	1			16	143.30	9	177.89				
Mech. Tech. 33	1.5									4	134.56
Mech Tech. 33	3									11	218.12
Mech. Tech. 3-4	1							9	126.39		
Mech Tech. 34	2										
Machining 34	2			7	188.27						
Machine Shop 34	3										
Mach. Shop Trade 34	3									2	283.96
Machine Tools 3-4	2							3	124.44		
Metal 34	1										
Metal Working 30	1	1	93.27								
Material Testing 32	2			15	154.57						
Welding 30/34	1	10	147.26			14	44.57				
Welding 31	1	10	147.26								
Welding 33	2			10	199.35						
Welding 3-4	2							24	215.31		
Welding 5	1							16	46.63		
Welding Trade 33	3									10	375.49
Welding & Fabric. 34	3										
Total		52	115.07	65	167.22	31	106.21	78	160.87	53	223.15

TABLE VIII (Continued)

Course	Credit	A Course Enrol-ment	A Per Student Course Enrol ment Cost	B Course Enrol-ment	B Per Student Course Enrol ment Cost	C Course Enrol-ment	C Per Student Course Enrol ment Cost	D Course Enrol-ment	D Per Student Course Enrol ment Cost	E Course Enrol-ment	E Per Student Course Enrol ment Cost	F Course Enrol-ment	F Per Student Course Enrol ment Cost
STRUCTURAL													
Construction 30	1					10	108.64	12	107.67				
Construction 31	1												
Construction Bldg. 34	3			2	947.04								
Construction Tech 33	1												
Construction Tech 34	2												
Construction Tech 34	3												
Construction Trade 34	3												
Woodworking 35	1									2	632.22		
Total				2	947.04	10	108.64	12	107.67	2	632.22		
MEDIA													
Graphic Arts 34	1												
Radio & T.V. Arts 36	1												
Total													
TECHNOLOGY													
Technology 33	2											16	568.65
Total												16	568.65

TABLE VIII (Continued)

Course	Credit	G Course Enrol-ment	G Per Student Course Enrol ment Cost	H Course Enrol-ment	H Per Student Course Enrol ment Cost	I Course Enrol-ment	I Per Student Course Enrol ment Cost	J Course Enrol-ment	J Per Student Course Enrol ment Cost	K Course Enrol-ment	K Per Student Course Enrol ment Cost
STRUCTURAL											
Construction 30	1	7	169.71								
Construction 31	1	8	148.50								
Construction Bldg. 34	3					7	213.36				
Construction Tech 33	1			23	115.85					1	306.26
Construction Tech 34	2									13	321.75
Construction Tech 34	3										
Construction Trade 34	3										
Woodworking 35	1										
Total		15	158.40	23	115.85	7	213.36			14	320.64
MEDIA											
Graphic Arts 34	1			14	91.62						
Radio & T.V. Arts 36	1	36	87.53								
Total		36	87.53	14	91.62						
TECHNOLOGY											
Technology 33	2										
Total											

TABLE IX

DIRECT INSTRUCTIONAL PER STUDENT-COURSE EQUIVALENT UNIT COST MAXIMUM, MINIMUM RANGE AND AVERAGE UNIT COST BY CURRICULAR PROGRAM FOR POPULATION COMPREHENSIVES

	Grade Twelve		
	Course Unit Cost Range		Average Course
Curricular Program	Maximum	Minimum	Unit Cost
Christian Ethics	25.11	25.11	25.11
English [a]	65.49	104.97	81.73
Fine Arts	37.07	127.37	71.59
Home Economics	43.77	258.58	100.95
Mathematics	34.48	87.54	45.00
Modern Languages	32.29	68.89	49.76
Physical Education	19.01	96.59	58.17
Science	41.92	76.31	54.98
Social Studies	31.51	57.02	46.85
Agriculture	83.02	222.99	147.47
Business Education	35.81	82.18	63.67
Commercial Cooking	58.57	215.35	126.42
Cosmetology	21.41	132.55	72.54
Drafting	58.73	151.58	87.94
Electrical	65.54	279.06	149.58
Mechanical	46.86	141.44	103.06
Media Technology	87.53	91.62	89.58
Structural	57.92	315.85	213.50
Technology	284.33	284.33	284.33

[a] Based on two credits.

Structural, technology, agriculture, and electrical continued to be in the range of high cost courses, with mechanical, commercial cooking and home economics becoming high cost courses at the Grade XII level. The middle range courses continued to be drafting, cosmetology, fine arts and English, with business education from the low range, and media from the high range, becoming new middle range courses. The lowest unit cost courses continued to be Christian Ethics, modern languages, mathematics, physical education, science and social studies. These courses were low in unit cost due to the low number of courses offered and the large number of students enrolled.

Direct Instructional per Student-Course Costs by Curricular Program

Table XXXVI in Appendix E, presents a breakdown of average costs per student-course in each curricular program by grade and school, that is, the direct instructional cost per curricular program divided by the number of students in the grade. In addition, the number of courses in each curricular program was indicated, as was the number of credits offered per grade. The actual courses are listed in Tables IV, VI, and VIII. To determine the credit values offered, courses were totalled and the credits for the same courses were totalled separately. Also included in Table XXXVI is the student-course enrollments for each curricular program. Shown too, is the total direct instructional cost by student course, grade and comprehensive in each curricular program. These are in actual rather than "equivalent" costs.

Table X presents the direct instructional per student course equivalent

costs by grade, comprehensive and population for Division III. The average per pupil costs for each comprehensive is given in addition to the average figure for the population. The unit costs in this Table differed from Table XXXVI in Appendix E in that they were equivalent costs, based on two credits in English and one credit in all other curricular programs.

The cost pattern for Division III shows an increase in average unit costs in grade nine over grade eight. This increase can be explained in part by the greater number of curricular programs offered in grade nine and higher teachers' salaries for grade nine teachers.

Table XI provides the direct instructional cost per student course equivalent by grade, comprehensive and population for Division IV. Included in this Table are the average per student costs for each comprehensive in addition to the average figure for the population. The course equivalent costs are based on two credits in English and one credit in each of the remaining curricular programs.

The Division IV cost pattern showed an increased average unit grade cost. The student-equivalent course costs increased in Division IV from Grade ten to Grade twelve in Comprehensives A, B, F, G, H, I, J, and K. In Comprehensives C and D, the average grade eleven cost was less than the grade ten cost, while the average grade twelve cost was the highest in the Division. This difference in average cost was the result of a reduction in curriculum programs offered at the grade eleven level in Comprehensive C, and a decrease in physical education and an increased pupil-teacher ratio in classes offered in

TABLE X

SUMMARY OF DIRECT INSTRUCTIONAL PER STUDENT-EQUIVALENT COURSE COSTS BY CURRICULAR PROGRAM

DIVISION III

Program Area Grade Eight	Comprehensive F	Population Average
English	65.47	65.47
Fine Arts	32.67	32.67
Home Economics	73.42	73.42
Mathematics	62.85	62.85
Modern Languages	38.06	38.06
Physical Ed. & Health	45.81	45.81
Science	27.87	27.87
Social Studies	37.57	37.57
General	79.00	79.00
Average Per Pupil Cost	46.68	46.68

TABLE X (Continued)

Program Area Grade Nine	Comprehensives C	F	G	H	I	Population Average
Christian Ethics			25.10			25.10
English		72.50	48.53	85.08	67.15	68.32
Fine Arts		33.91	75.17	41.15	43.69	48.48
Home Economics	65.27	74.58	86.50	56.75	82.52	73.12
Mathematics		79.84	59.29	44.31	49.50	58.24
Modern Languages		41.78	60.61	48.36	45.77	49.13
Health & Physical Education		54.08	24.41	42.79	61.64	45.73
Science		30.89	43.93	47.90	53.73	44.11
Social Studies		27.50	41.93	54.42	53.64	44.37
Business Education			29.86	41.89		35.88
Commercial Cooking			100.37			100.37
Drafting					51.23	51.23
Technology	32.26	79.92		135.84	168.12	127.96
Average Per Student Cost		49.14	42.24	57.93	59.79	52.28

TABLE XI

SUMMARY OF DIRECT INSTRUCTIONAL PER STUDENT-EQUIVALENT COURSE COSTS
BY CURRICULAR PROGRAM

DIVISION IV

Program Area Grade 10	COMPREHENSIVE SCHOOLS											Population Average
	A	B	C	D	E	F	G	H	I	J	K	
Christian Ethics							21.48					21.48
English	51.35	71.04	63.66	57.64	62.58	62.35	54.10	93.60	70.24	72.16	67.80	66.04
Fine Arts	63.61	56.38			47.77	43.95	84.32	52.91	46.26	69.98	47.41	44.78
Home Economics	64.67	44.12	64.73	70.04	95.75	65.52	82.02	61.04	99.25	63.86	81.31	72.03
Mathematics	65.10	30.89	63.49	34.70	46.58	36.43	46.61	45.38	46.76	42.63	47.63	46.02
Modern Languages	26.64	38.60	55.02	55.76	67.83	50.73	63.72	50.65	43.99	57.89	48.75	50.87
Physical Education	56.58	18.78	22.51	25.83	14.80	27.99	61.14	40.52	33.81	17.43	9.80	29.93
Science	43.18	27.57	43.77	36.50	52.67	38.69	38.55	43.68	47.59	40.66	40.11	38.45
Social Studies	36.95	42.28	52.55	40.82	44.60	39.94	37.03	48.14	61.39	36.24	44.13	44.00
Agriculture		56.76	65.75							111.85	63.74	74.53
Business Education	38.97	33.94	33.71	32.81	48.70	28.50	38.52	33.63	45.18	32.13	42.67	37.16
Commercial Cooking	92.01		83.40		35.62		67.83	59.30	70.06	41.47		64.24
Cosmetology							46.99			29.42	33.16	36.52
Drafting		30.72	46.25	70.59	127.12			57.12	61.52	43.03	33.75	58.76
Electricity		88.84	59.74	52.95	68.12			74.50	87.50	35.16	83.66	68.81
General	65.87		164.71				89.50			80.91		100.25
Mechanical		65.89	65.06	39.83	78.89			122.04	77.78	105.67	52.88	76.00
Media Technology								66.81	62.14		34.14	54.36
Structural		75.00	91.99	73.46	114.95			96.24	137.03	139.76	82.40	101.35
Technology						95.55						95.55
Vocational A	44.15				149.32					152.38	85.33	107.80
Average Grade 10 Cost	48.60	35.34	51.29	37.61	53.77	45.82	48.75	55.53	54.55	43.04	40.90	46.84

TABLE XI (Continued)

SUMMARY OF DIRECT INSTRUCTIONAL PER STUDENT-EQUIVALENT COURSE COSTS
BY CURRICULAR PROGRAM

DIVISION IV

Program Area Grade 11	COMPREHENSIVE SCHOOLS											Population Average
	A	B	C	D	E	F	G	H	I	J	K	
Christian Ethics							24.29					24.29
English [a]	56.67	78.00	57.43	60.88	74.77	64.40	49.49	95.90	85.32	72.76	91.06	71.52
Fine Arts	57.00	94.40			68.56	44.51	88.74	71.85	32.55	69.08	37.41	62.67
Home Economics	42.15	41.78	49.58	86.10	125.42	70.90	124.37	57.42	97.70	82.44	110.16	80.73
Mathematics	52.16	38.04	37.12	32.74	50.56	40.64	43.29	44.76	47.78	44.59	42.63	43.12
Modern Languages	32.14	37.31	46.81	26.98	58.62	48.52	68.71	46.23	54.82	50.38	39.77	46.39
Physical Education		22.97	33.48	19.52	43.67		83.61	45.84	73.90	71.44	74.50	52.70
Science	61.19	37.92	43.39	36.18	58.24	48.19	43.71	44.86	48.34	40.41	45.93	46.21
Social Studies	41.23	46.18	40.17	37.81	44.10	68.97	38.52	48.34	47.77	48.80	44.73	46.05
Agriculture	441.07	59.96								69.27	107.63	146.74
Business Education	53.26	68.62	37.65	35.60	47.46	40.21	48.34	47.81	49.17	36.33	37.51	45.10
Commercial Cooking	110.79		80.71		97.11		75.24	37.75	113.18	43.23		79.72
Cosmetology	164.04						45.97			37.79	101.53	87.32
Drafting	87.88	101.79	34.54	67.98	127.68		92.11	167.01	48.18	39.48	122.62	88.93
Electrical	121.11	129.81	88.51	75.81	98.03		62.17	99.69	136.30	64.88	279.06	118.54
General										139.76		139.76
Mechanical	67.13	159.81	73.25	48.56	53.31		127.34	58.98	94.82	75.22	68.38	82.68
Media Technology							106.06		82.28			94.17
Structural		315.68	131.42	79.41	464.29		146.02	114.66	332.31	97.57	66.80	194.24
Technical						128.57						128.57
Vocational A											83.33	83.33
Average Grade 11 Cost	62.84	45.49	43.10	34.30	57.24	52.83	49.89	57.03	57.26	47.69	60.48	51.65

[a] Computed on a two credit basis

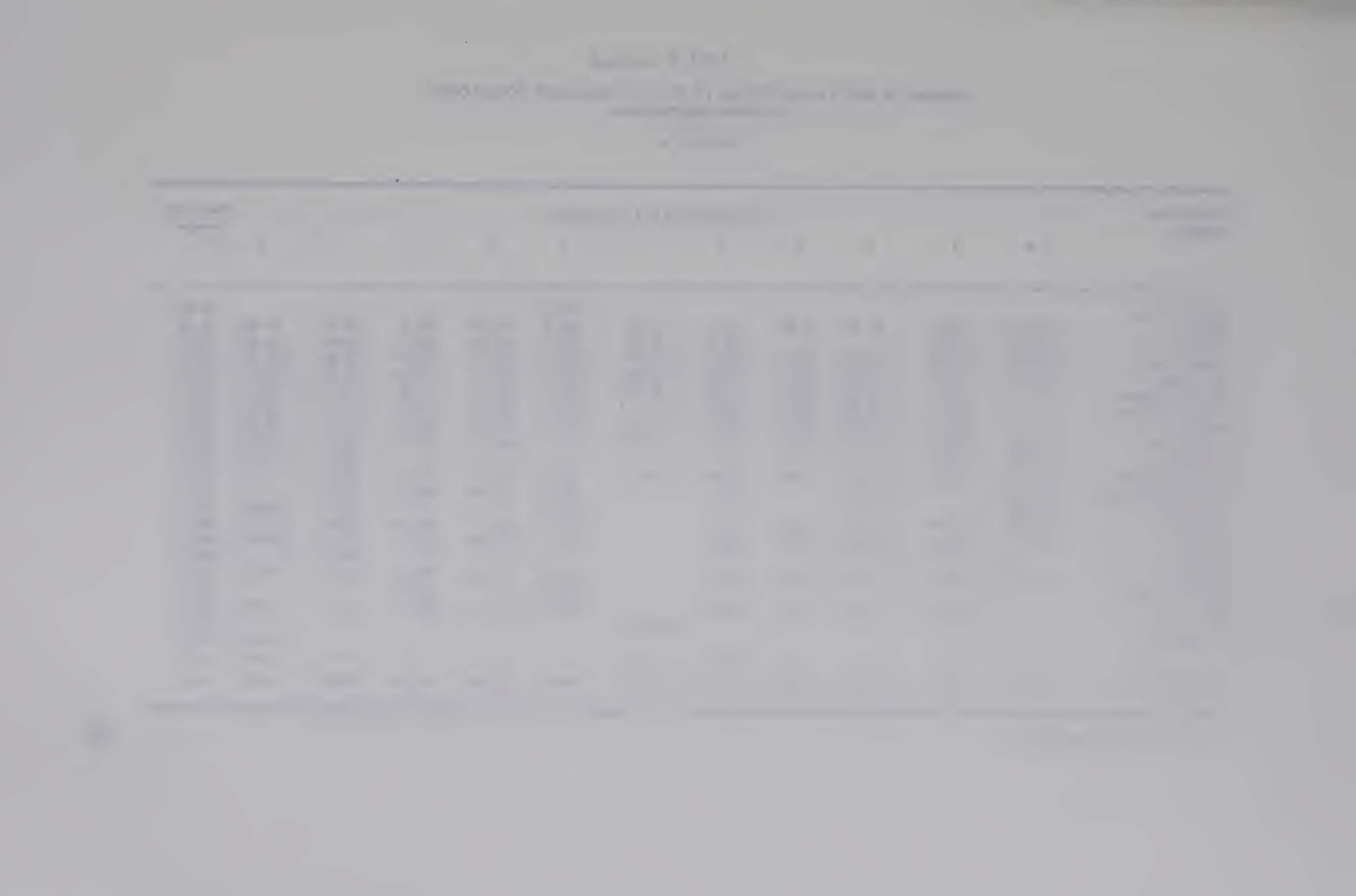


TABLE XI (Continued)

SUMMARY OF DIRECT INSTRUCTIONAL PER STUDENT-EQUIVALENT COURSE COSTS
BY CURRICULAR PROGRAM

DIVISION IV

Program Area Grade 12	COMPREHENSIVE SCHOOLS											Population Average
	A	B	C	D	E	F	G	H	I	J	K	
Christian Ethics							25.11					25.11
English [a]	65.49	76.72	89.68	70.16	77.30	93.96	65.86	104.97	84.62	77.36	92.96	81.73
Fine Arts	127.37	91.00				56.23	88.77	63.35	37.07		37.33	71.59
Home Economics	53.87	49.18	43.77	103.33		78.78	258.58	156.32	63.95	110.92	90.75	100.95
Mathematics	52.49	35.84	34.48	87.54	47.82	40.58	49.67	49.59	53.54	39.83	48.20	45.00
Modern Languages	36.91	32.29	52.63	43.39	63.02	57.06	56.23	50.19	68.89	40.04	46.75	49.76
Physical Education		32.64	36.29	19.01	47.28		78.87	43.28	91.02	78.58	96.59	58.17
Science	64.70	41.92	52.10	48.95	59.17	76.31	56.57	50.14	58.29	45.58	51.04	54.98
Social Studies	48.88	49.01	40.56	31.51	50.96	57.02	48.29	47.03	53.16	43.83	45.15	46.85
Agriculture	222.99	138.07	170.94							83.02	122.33	147.47
Business Education	62.04	56.93	96.73	35.81	64.88	78.16	82.18	52.45	65.38	62.78	43.05	63.67
Commercial Cooking	215.35		80.71					58.57		151.04		126.42
Cosmetology	66.19				21.14		68.70			73.84	132.55	72.54
Drafting	106.19	58.75	129.51				151.58	79.00	95.90	75.97	94.55	87.94
Electrical	134.53	131.25	83.30	65.54			93.59	125.54	250.37	183.06	279.06	149.58
General Mechanical	141.44	130.07	72.25	46.85			115.07	123.91	106.21	114.05	77.61	103.06
Media Technology							87.53	91.62				89.58
Structural		315.68	108.64	107.67	632.22		158.40	57.93	213.36		114.17	213.50
Technical						568.65						284.33
Vocational A												
Average Grade 12 Cost	70.52	53.98	51.88	38.76	51.30	66.39	51.67	62.96	63.58	49.36	65.81	56.93

Comprehensive D. Comprehensive E had the lowest average cost per student equivalent course in grade twelve. Nine fewer curricular programs were offered in this school at the grade twelve level than in other Division IV grades, resulting in the reduction in average per student-equivalent costs.

In comparing the grade costs per pupil-course in Divisions III and IV, grade nine costs exceeded grade ten costs. This resulted from the nine required courses in grade nine as opposed to a maximum of eight courses in grade ten.

Average Direct Instructional per Student-Enrolled Costs by Division, Grade, and Comprehensive

Table XII provides the direct instructional costs per student-enrolled by Division, grade comprehensive, and population. These derived costs are related to sub-problem 7 on page 3.

This Table demonstrated the unreliability of grade level costs without standard units, in this case, the standard or equivalent student. In contrast to the subject costs (Tables XI and X) and curricular program costs, the per pupil-enrolled costs by grade level decreased from grade ten to grade eleven and increased from grade eleven to grade twelve in the total population. Grade costs varied in the comprehensives with grade ten having the highest instructional cost in five schools, grade eleven in three schools, and grade twelve in three schools. Grade nine students had a higher average direct instructional cost than grades ten, eleven and grade twelve students, while direct instructional costs for grade eight students were exceeded only by grade ten costs.

TABLE XII

AVERAGE DIRECT INSTRUCTIONAL PER STUDENT-ENROLLED COSTS BY DIVISION BY GRADE AND COMPREHENSIVE

	COMPREHENSIVES											
	A		B		C		D		E		F	
	Grade Enrolment	Per Student Cost	Grade Enrolment	Per Student Cost	Grade Enrolment	Per Student Cost	Grade Enrolment	Per Student Cost	Grade Enrolment	Per Student Cost	Grade Enrolment	Per Student Cost
DIVISION III												
Grade 8											312	421.65
Grade 9					15	617.59[a]					353	440.20
Total Cost Per Student					15	617.59					665	431.50
DIVISION IV												
Grade 10	313	448.62	231	346.23	207	425.46	163	419.03	305	460.51	371	381.79
Grade 11	222	501.35	362	432.99	141	382.40	181	324.07	311	379.52	334	406.35
Grade 12	252	499.57	201	393.94	148	397.14	138	324.97	252	348.08	305	514.16
Total Cost Per Student	789	463.22	614	400.83	525	410.65	482	356.44	868	398.92	1010	429.88
Total Direct Instructional Cost Per Comprehensive Student	787	463.22	614	400.83	525	410.65	482	356.44	877	398.92	1675	430.53

[a] 127 part time students, the equivalent of 15 full time students.

Table XII (Continued)

	COMPREHENSIVES										
	G		H		I		J		K		
	Grade Enrolment	Per Student Cost	Grade Enrolment	Per Student Cost	Grade Enrolment	Per Student Cost	Grade Enrolment	Per Student Cost	Grade Enrolment	Per Student Cost	Population Averages
DIVISION III											
Grade 8 Grade 9	485	342.98	394	476.52	369	546.36					451.52
Total Cost Per Student	485	342.98	394	476.52	369	546.36					449.34
DIVISION IV											
Grade 10	418	379.40	427	459.34	428	473.11	484	444.21	375	422.53	423.66
Grade 11	383	359.81	384	424.35	382	450.16	414	438.81	400	494.60	417.67
Grade 12	346	392.28	374	455.57	370	452.12	405	364.87	356	465.47	418.93
Total Cost Per Student	1147	376.74	1158	446.79	1180	459.10	1303	417.80	1131	461.54	420.17
Total Direct Instructional Cost Per Comprehensive Student	1632	366.71	1579	454.21	1549	479.89	1303	417.80	1131	461.54	421.88

The major factors contributing to this inconsistency of cost patterns were: (1) lack of a standard unit for a grade enrolled student, (2) the practice of students taking courses at other than their own grade level, and (3) the grade registration dilemma.

Each student, in grade enrollment figures, was assumed to be equivalent to every other student in terms of direct instructional time provided. This assumption held in the main for Division III students who took a required program, with restricted options, but did not hold for Division IV full-time students who took varying numbers of courses and, therefore, had varying instructional time totals. As well, the problem of partial students, taking a less than full grade program load, distorted the Division IV per student-enrolled unit costs.

The second contributing factor to this anomaly was the practice of high school students taking subjects at grade levels other than the grade in which they were enrolled.

Any deviation in courses taken by students in grades other than the grade in which they were enrolled rendered the total student grade enrollment inaccurate. Students, generally, were enrolled in courses below their enrolled grade. This resulted in the per student enrolled costs, by grade, to be higher than they actually were in grades ten and eleven and lower in grade twelve.

Administrators frequently register students in the highest grade in which they take courses, e.g. a student taking three grade twelve subjects and four grade eleven subjects was registered as a grade twelve student. This

process made the determination of registration in a grade subject to question. The difficulty of arriving at exact numbers of students in each grade was expressed by six of the eleven chief administrators of the comprehensives in the population.

As a result of these factors the validity of the grade costs based on per student enrollment is questioned. Standardized, or equivalent grade level enrollments are needed, based on the actual subjects taken by students, to eliminate the deflation of upper grade level costs in Division IV.

Also, suspect was the total direct instructional cost per high school student as this figure did not reflect differences between part-time and full-time students. In addition, the problem is further complicated by the practice of designating students to the highest grade in which they were taking subjects. However, this total, based on the total instructional cost divided by the total number of students in the comprehensive, eliminated some of the grade placement dilemma and therefore, served a useful purpose as a base for further analysis.

III. RESIDENT INDIRECT INSTRUCTIONAL COSTS

Resident indirect instructional costs were computed to determine the curricular program costs, on a comprehensive school basis.

Two unit costs were also computed in each comprehensive, the cost per student-enrolled in the curricular program and the cost per pupil-enrolled

in the school. This procedure was used to identify actual costs for students enrolled in a particular curricular program and the relation of this actual cost to the general total enrollment in the school.

Resident indirect costs were computed from two sources, teacher salaries and instructional supply and equipment costs. Teachers' specific preparation time formed the salary dimension, while costs of supplies and equipment designated to specific subject areas formed the other costs. The administrative time of department heads was not included in resident indirect cost for two reasons: (1) four of the eleven comprehensives did not have department heads, and (2) the difficulty experienced by department heads in differentiating between the proportion of their administrative time devoted to the subject area and that devoted to general school administration. A more accurate method of accounting to the administrative time of department heads may be the "diary method" of recording activities.

Resident Indirect Instructional per Student-Enrolled Costs by Curricular Program

Table XIII provides the resident indirect instructional costs per student-course and per student-enrolled by curricular programs in each of the comprehensive schools of the population.

Difficulty was experienced in determining the cost of instructional equipment and supplies in some of the comprehensive schools due to accounting procedures. One school operated on an academic and vocational supply cost with no differentiation of curricular program expenditure, e.g. Comprehensive

TABLE XIII

RESIDENT INDIRECT INSTRUCTIONAL PER STUDENT-COURSE COSTS AND STUDENT ENROLLED COSTS BY CURRICULAR PROGRAMS

CURRICULAR PROGRAM	A	B	C[a]	D	E	F	G	H	I	J	K
Christian Ethics											
Salaries											
Other							221.50				
Total							221.50				
Cost Per Student Enrolled in School							0.14				
Cost Per Student Course in Program							0.15				
English											
Salaries		5252.77	875.67		1504.22	384.09		5403.81			
Other	399.11		59.60	121.96				307.01	174.44	180.07	871.43
Total	399.11	5252.77	935.27	121.96	1504.22	384.09		5710.82	174.44	180.07	871.43
Cost Per Student Enrolled in School	0.51	8.56	1.78	0.25	1.73	0.23		3.61	0.11	0.14	0.77
Cost Per Student Course in Program	0.53	4.44	1.99	0.12	1.52	0.23		3.65	0.11	0.07	0.83
Fine Arts											
Salaries		881.68						1742.73			
Other	2660.76	4034.50			136.00	7371.75	4645.00	591.22	1294.94	3539.70	4749.42
Total	2660.76	4916.18			136.00	7371.75	4645.00	2333.95	1294.94	3539.70	4749.42
Cost Per Student Enrolled in School	3.38	8.01			0.16	4.40	2.84	1.48	0.84	2.72	4.20
Cost Per Student Course in Program	15.65	33.90			2.39	5.02	24.45	4.07	2.30	13.61	15.83

TABLE XIII (Continued)

CURRICULAR PROGRAM	A	B	C[a]	D	E	F	G	H	I	J	K
Home Economics											
Salaries		808.55	212.48		487.50	533.15		424.75	6925.39		
Other	798.23	408.50	329.64	666.69	782.61	2339.79	1607.50	1650.81	1552.93	1084.57	340.50
Total	798.23	1217.05	542.12	666.69	1270.11	2872.94	1607.50	2075.56	8478.32	1084.57	340.50
Cost Per Student Enrolled in School	1.01	1.98	1.03	1.38	1.45	1.72	0.98	1.31	5.47	0.83	0.30
Cost Per Student-Course in Program	7.98	4.02	1.36	7.33	6.11	5.50	5.87	4.28	17.92	4.74	2.91
Mathematics											
Salaries		2255.93	578.25		2807.68			6875.41	1465.00		
Other	399.11		45.88	93.35			435.10	383.31	139.85	44.45	78.41
Total	399.11	2255.93	624.13	93.35	2807.68		435.10	7258.72	1604.85	44.45	78.41
Cost Per Student Enrolled in School	0.51	3.67	1.19	0.19	3.20		0.27	4.59	1.04	0.03	0.07
Cost Per Student-Course in Program	0.47	2.29	1.07	0.11	2.64		0.21	3.52	0.81	0.03	0.06
Modern Languages											
Salaries		490.99	145.53		1021.33			3281.13			
Other	332.59	1111.00	255.17	454.39	150.00		465.10	2194.86	1111.54	779.78	1056.31
Total	332.59	1601.99	400.70	454.39	1171.33		465.10	5475.99	1111.54	779.78	1056.31
Cost Per Student Enrolled in School	0.42	2.61	0.76	0.94	1.34		0.28	3.46	0.72	0.60	0.93
Cost Per Student-Course in Program	0.87	7.63	2.13	2.04	3.57		0.69	5.89	0.94	1.17	1.83

TABLE XIII (Continued)

CURRICULAR PROGRAM	A	B	C	D	E	F	G	H	I	J	K
Physical Education											
Salaries	137.50	731.73	530.28				212.70	906.67	748.00		
Other	2660.76	724.50	657.86	539.00	2048.45	2837.01	3660.00	1557.27	1843.90	987.53	4721.92
Total	2798.26	1456.23	1188.14	539.00	2048.45	2837.01	3872.70	2463.94	2591.90	987.53	4721.92
Cost Per Student Enrolled in School	3.56	2.37	2.26	1.11	2.34	1.69	2.37	1.56	1.67	0.76	4.17
Cost Per Student-Course in Program	6.33	2.83	2.43	0.99	4.56	2.73	4.02	2.46	2.24	1.03	5.87
Science											
Salaries	78.29	3139.55	650.68	1502.71	2965.60	1005.91		5333.19			
Other	7317.08	1717.50	1165.38	1434.00	1159.94	8895.92	3387.00	3725.20	5076.42	2259.77	3785.91
Total	7395.37	4857.05	1816.06	2936.71	4125.54	9901.83	3387.00	9058.39	5076.42	2259.77	3785.91
Cost Per Student Enrolled in School	9.40	7.91	3.50	6.09	4.70	5.91	2.08	5.74	3.27	1.73	3.35
Cost Per Student-Course in Program	7.24	5.56	2.86	4.18	3.51	4.23	2.06	5.18	2.39	1.37	2.53
Social Studies											
Salaries		2307.27	1210.27	745.48	3725.40	426.15	10053.45	5593.85			
Other	1330.38	29.50	166.58	336.61	904.72		557.50	720.06	1103.65	207.85	481.42
Total	1330.38	2336.77	1376.85	1082.09	4630.12	426.15	10610.95	6313.91	1102.65	207.85	481.42
Cost Per Student Enrolled in School	1.69	3.81	2.62	2.24	5.28	0.25	6.50	3.99	0.71	0.16	0.43
Cost Per Student-Course in Program	1.28	3.47	2.06	1.86	4.99	0.23	6.56	3.66	0.62	0.17	0.34

TABLE XIII (Continued)

CURRICULAR PROGRAM	A	B	C	D	E	F	G	H	I	J	K
Agriculture											
Salaries		708.73	544.68								2969.75
Other	1064.30	470.00	340.93							2485.16	837.40
Total	1064.30	1178.73	885.61							2485.16	3807.15
Cost Per Student Enrolled in School	1.35	1.92	1.69							1.91	3.37
Cost Per Student-Course in Program	81.87	15.72	16.40							16.35	36.61
Business Education											
Salaries	347.46	1926.25	264.93		745.65			1979.73	1079.20		
Other	3592.03	2184.00	934.56	427.44	4731.75	4635.79	8848.00	1454.51	992.99	2015.56	1448.91
Total	3939.49	1178.73	1199.49	427.44	5477.40	4635.79	8848.00	3434.24	2072.19	2015.56	1448.91
Cost Per Student Enrolled in School	5.01	1.92	2.28	0.89	6.26	2.77	5.42	2.17	1.33	1.55	1.28
Cost Per Student-Course in Program	4.05	15.72	2.98	1.21	7.80	8.02	8.61	2.89	2.28	1.61	1.16
Commercial Cooking											
Salaries	45.85										
Other	1064.30		357.87		2194.73		3159.00	307.50	27.50	889.78	
Total	1110.15		357.87		2194.73		3159.00	307.50	27.50	889.78	
Cost Per Student Enrolled in School	1.41		0.68		2.50		1.94	0.19	0.02	0.68	
Cost Per Student-Course in Program	27.07		25.56		37.20		54.47	2.75	1.31	18.93	

TABLE XIII (Continued)

CURRICULAR PROGRAM	A	B	C	D	E	F	G	H	I	J	K
Cosmetology											
Salaries	94.32										
Other	532.15						1571.00			2770.18	319.22
Total	626.47						1571.00			2770.18	319.22
Cost Per Student Enrolled in School	0.80						0.96			2.13	0.28
Cost Per Student-Course in Program	14.92						16.03			20.83	3.26
Drafting											
Salaries		729.27	199.11					1326.93			
Other	1330.38	437.50	298.58	136.66	1192.17		475.00	377.86	182.69	1045.68	1406.30
Total	1330.38	1166.77	497.69	136.66	1192.17		475.00	1704.79	182.69	1045.68	1406.30
Cost Per Student Enrolled in School	1.69	1.90	0.95	0.28	1.36		0.29	1.08	0.12	0.80	1.24
Cost Per Student-Course in Program	25.10	8.71	7.90	1.98	45.85		8.19	11.07	0.44	12.75	15.45
Electrical											
Salaries	163.10	911.45	553.10		239.26			768.33	341.87		
Other	1623.06	721.00	536.45	245.38	573.54		2931.50	925.39	1448.32	1807.58	5238.44
Total	1786.16	1632.45	1089.55	245.38	812.80		2931.50	1693.72	1790.19	1807.58	5238.44
Cost Per Student Enrolled in School	2.67	2.66	2.07	0.51	0.93		1.80	1.07	1.16	1.39	4.63
Cost Per Student-Course in Program	33.70	41.86	14.72	3.18	10.42		45.80	12.10	35.80	28.69	65.48

TABLE XIII (Continued)

CURRICULAR PROGRAM	A	B	C	D	E	F	G	H	I	J	K
General											
Salaries											
Other						5133.64			72.83		
Total						5133.64			72.83		
Cost Per Student Enrolled in School						3.06			0.05		
Cost Per Student-Course in Program						14.54			0.17		
Mechanical											
Salaries	196.00	1294.36	877.97	533.34	569.06			4112.30	1269.97		
Other	7075.27	1234.50	1550.83	721.90	4113.78		5665.50	5583.91	5666.43	7041.13	8538.83
Total	7271.27	2528.86	2428.80	1255.24	4682.84		5665.50	9696.21	6936.40	7041.13	8538.83
Cost Per Student Enrolled in School	9.24	4.12	4.63	2.60	5.34		3.47	6.14	4.48	5.40	7.55
Cost Per Student-Course in Program	83.58	30.84	15.98	10.82	26.16		47.61	30.97	24.51	17.78	22.95
Media											
Salaries											
Other							350.00	359.05	508.39		
Total							350.00	359.05	508.39		
Cost Per Student Enrolled in School							0.21	0.23	0.33		
Cost Per Student-Course in Program							7.00	11.97	2.84		

TABLE XIII (Continued)

CURRICULAR PROGRAM	A	B	C	D	E	F	G	H	I	J	K
Structural											
Salaries		690.91	254.69					1528.57	205.00		
Other		838.50	359.28	164.58	250.00		1959.00	1148.68	1268.72	1569.53	1926.70
Total		1529.41	613.97	164.58	250.00		1959.00	2677.25	1473.72	1569.53	1926.70
Cost Per Student Enrolled in School		2.49	1.17	0.34	0.29		1.20	1.70	0.95	1.20	1.70
Cost Per Student-Course in Program		37.30	14.62	2.39	15.63		63.19	27.60	24.98	40.24	21.89
Technology											
Salaries											
Other						6218.16		93.84			
Total						6218.16		93.84			
Cost Per Student Enrolled in School						3.71		0.06			
Cost Per Student-Course in Program						37.23		0.43			
Vocational A											
Salaries					132.34					1433.83	
Other					1335.22					598.64	842.12
Total					1467.56					2032.47	842.12
Cost Per Student Enrolled in School					1.67					1.56	0.74
Cost Per Student-Course in Program					14.53					21.85	2.29

TABLE XIII (Continued)

CURRICULAR PROGRAM	A	B	C	D	E	F	G	H	I	J	K
Total											
Salaries	1,062.52	22,129.44	6,897.64	2,781.53	14,197.84	2,349.30	10,266.15	39,277.50	12,034.43	1,433.83	2,969.75
Other	32,321.55	13,911.00	7,058.61	5,342.00	19,572.91	37,432.06	42,980.60	21,380.48	22,460.54	29,306.97	36,643.24
Total	33,384.07	38,377.21	13,956.25	8,123.53	33,770.75	39,781.36	53,246.75	60,659.98	34,494.97	30,740.80	39,612.99
Cost Per Student Enrolled in School	42.42	62.50	26.58	16.85	38.90	23.75	32.63	38.42	22.38	23.59	35.02
Cost Per Student-Course in Program	5.39	6.16	3.12	1.52	5.29	2.30	4.23	3.86	2.63	2.61	3.70

[a] Supply cost per program prorated from total expenditure on the basis of the average supply costs in comprehensives A,B,E,F,G,H,I,J,K, as shown in Table

[b] Supply cost per program prorated from total academic and vocational-technical expenditure on the basis of supply costs in comprehensives A,B,E,F,G,H,I,J,K.

C. Others designated expenditures for selected curricular programs and aggregated the remaining expenditures of other areas into General Expenditure, e.g. Comprehensives B, E and F. One school allocated an amount per pupil in selected curricular programs and a further amount per pupil for the remaining academic and vocational-technical curricular programs. Proration of curricular program supply and equipment costs were employed in allocating the instructional costs in Comprehensives C and D. These prorations were based on the average supply costs in Comprehensives A, B, E, F, G, H, I, J, and K and are presented in Table XXXVII in Appendix F.

Indirect costs varied considerably over the twenty-one subject areas and over the eleven comprehensive schools.

IV. RESIDENT IMPLEMENTARY PER STUDENT COSTS

This section deals with specific sub-problems 9, 10, 11, 12 and 13 on pages 3 and 4 of this study. Resident implementary costs included all expenditures which could not be charged to a specific curricular program. Resident implementary costs were subdivided into two categories, plant implementary and general implementary expenditures. The former category included all expenditures directly related to the cost of plant operation and maintenance, and aggregated the expenditures in series 610, 640, 650, 651, 710, and 720. General implementary expenditures included three basic cost categories, the service function activities conducted within the comprehensive, student supervision, and the general non-curricular and non-service function expenditures

which related to the operation of the school. Items in the last category included substitute teachers, clerical and business staff, general supply equipment and text books, other equipment and supplies and food service staff salaries.

Resident Implementary Costs by Category

Table XIV provides the resident implementary costs, subdivided by general implementary and plant implementary categories on a cost per student enrolled basis. The resident implementary cost per student enrolled varied from $215.61 in Comprehensive F to $390.29 in Comprehensive A. The average for the population was $282.90.

General implementary costs per student-enrolled ranged from a high of $209.75 in Comprehensive J to a low of $137.23 in Comprehensive F, resulting in an average general implementary cost of $174.72 for the population.

Plant implementary costs per student-enrolled averaged $108.34 in the population. The highest cost was expended in Comprehensive A at $194.33, and the least cost was incurred in Comprehensive F at $77.88 per student enrolled. Total energy plants, in Comprehensives C and J, used natural gas to generate the electrical power required and to heat the building. While the average per student enrolled cost was above the population average in both of these comprehensives, Comprehensive J ranked third in plant implementary cost and Comprehensive C fifth.

It was assumed that all plant implementary costs were charged against

TABLE XIV

RESIDENT IMPLEMENTARY PER STUDENT ENROLLED COSTS
BY COMPREHENSIVE

Comprehensive	Implementary Cost Per Student Enrolled		
	General Implementary	Plant Implementary	Total Implementary
A	195.96	194.33	390.29
B	149.24	105.74	254.98
C	185.19	110.80	295.99
D	163.09	110.35	273.44
E	207.56	147.57	355.13
F	137.73	77.88	215.61
G	169.55	81.87	251.42
H	173.81	82.05	255.86
I	155.36	84.91	240.27
J	209.75	140.25	350.00
K	199.49	133.12	332.61
Population Average	174.56	108.34	282.90

the day-program in each comprehensive. The cost of adult education classes, night school related activities and community activities conducted within the school were not considered.

Teacher Related Resident Implementary Costs as a Function of General Implementary Costs

Teachers were involved in three basic service activities within general resident implementary costs, namely: (1) general service function, (2) auxiliary service function, and (3) student supervision activities. Each of these activities provided a service to the students enrolled in the comprehensives, but were not related directly to the curricular program offered within the population.

General Service Function. This function included the non-curricular programs of guidance counselling, library, instructional media (audio-visual and television) and the administrative function. Table XV summarizes the costs associated with the programs of the general service function area for each comprehensive and the population average costs. This section is directly related to specific sub-problem 10 listed on page 3 of this study.

The salary segment of the general service function cost included the prorated salaries of teachers, technicians and students who were involved in these program areas. These salary costs did not include clerical or business support personnel who provided support activities in the general service functions.

The cost of equipment and supplies was designated as "other" costs to the program areas, e.g. expenditure series 230, 235, and 236. No separate

TABLE XV

RESIDENT PER STUDENT-ENROLLED COSTS OF GUIDANCE, LIBRARY, INSTRUCTIONAL MEDIA AND ADMINISTRATION

	Guidance Counselling	Library	Instructional Media		Administration	Total
			Audio Visual	Television		
Comprehensive A						
Salaries	17,264.50	11,133.99			31,128.32	59,526.71
Other	332.59	11,147.74	7,962.67			19,443.00
Total	17,597.09	22,281.73	7,962.67		31,128.32	78,969.71
Cost Per Student	22.36	28.31	10.12		39.55	100.34
Comprehensive B						
Salaries	5,790.52	10,471.99			22,939.41	39,201.93
Other	939.00	5,261.00	2,412.50			8,612.50
Total	6,729.52	15,732.99	2,412.50		22,939.41	47,814.43
Cost Per Student	10.96	25.62	3.93		37.36	77.87
Comprehensive C						
Salaries	11,692.00	6,143.00			28,156.50	45,991.49
Other		669.68	419.77			1,089.46
Total	11,692.00	6,812.68	419.77		28,156.50	47,080.95
Cost Per Student	22.27	12.98	0.80		53.63	89.68
Comprehensive D						
Salaries	3,350.15	9,526.49			18,751.95	31,628.59
Other		1,175.32	736.68		18,751.95	1,912.00
Total	3,350.15	10,701.81	736.68		18,751.95	33,540.59
Cost Per Student	6.95	22.20	1.53		38.90	69.59
Comprehensive E						
Salaries	8,540.00	12,140.00	5,533.67		41,379.66	67,593.31
Other	1,465.73	11,711.79	8,389.14			21,566.66
Total	10,005.73	23,851.79	13,922.81		41,379.00	89,159.97
Cost Per Student	11.53	27.48	16.04		47.67	102.72
Comprehensive F						
Salaries	13,694.48	12,519.99	560.91	3,117.57	59,109.13	89,002.06
Other	1,033.56	9,322.00	5,961.00	27,152.02		50,997.37
				7,520.00		
Total	14,728.04	21,841.99	6,521.91	37,789.59	59,109.13	139,990.66
Cost Per Student	8.79	13.04	3.89	22.56	35.29	83.58

TABLE XV (Continued)

RESIDENT PER STUDENT-ENROLLED COSTS OF GUIDANCE, LIBRARY, INSTRUCTIONAL MEDIA AND ADMINISTRATION

	Guidance Counselling	Library	Instructional Media		Administration	Total
			Audio Visual	Television		
Comprehensive G						
Salaries	32,512.23	21,464.59		26,082.38	65,828.94	145,888.08
Other	825.00	14,145.50	14,896.00	3,000.00		32,866.50
Total	33,337.23	35,610.09	14,896.00	29,082.38	65,828.94	178,754.58
Cost Per Student	20.43	21.82	9.13	17.82	40.34	109.53
Comprehensive H						
Salaries: Prof	39,229.98	9,863.99			64,810.47	113,904.44
Tech			4,672.00			
Other	524.31	11,995.76	2,488.28			19,680.35
Total	39,754.29	21,859.75	7,160.28		64,810.47	133,584.79
Cost Per Student	25.18	13.84	4.53		41.05	84.60
Comprehensive I						
Salaries:	36,849.98	9,007.99			54,693.02	100,550.94
Tech			5,225.61			
Other	684.05	7,748.46	3,472.42			17,130.54
Total	37,534.03	16,756.40	8,698.03		54,693.02	117,681.48
Cost Per Student	24.23	10.82	5.62		35.30	75.97
Comprehensive J						
Salaries: Prof	20,693.98	18,299.98	975.00	1,181.25	64,535.62	105,685.81
Tech			6,039.82	6,902.66		
Other	136.32	11,571.73	6,428.75	3,982.50		35,061.55
Total	20,830.30	24,871.71	13,443.57	12,066.41	64,535.62	140,747.37
Cost Per Student	15.99	22.93	10.32	9.26	49.52	108.02
Comprehensive K						
Salaries	23,392.70	12,390.00	12,628.22	1,161.00	55,411.25	104,983.12
Other	1,180.06	9,659.46	6,100.54			16,940.06
Total	24,572.76	22,049.46	18,728.76	1,161.00	55,411.25	121,923.18
Cost Per Student	21.73	19.50	16.56	1.02	48.99	107.80
TOTAL	220,131.14	227,370.40	94,902.98	80,099.38	506,743.61	1,129,247.71
Average Cost Per Student	18.13	18.72	7.81	13.95[a]	41.72	92.98

[a] Average cost per student enrolled (5741) in comprehensives offering E.T.V. services



accounting of equipment and supplies for administrative purposes was available as an isolated accounting series within the population. These costs were contained in expenditure series 242 and 250, which were charged to resident implementary expenditures as aggregated costs.

The cost of guidance counselling varied from an upper unit cost per student-enrolled of $25.18 in Comprehensive H to $6.95 in Comprehensive D, with an average unit cost for the population of $18.13. Each of the population comprehensives had at least one full-time guidance counsellor with the exception of Comprehensives B and D which had teacher-guidance counsellors.

Library service function per student unit costs varied throughout the population with the cost of library equipment and supplies exceeding the salary cost in each comprehensive. Per student costs varied from $28.31 in Comprehensive A to $10.82 in Comprehensive I, resulting in an average per student library service function cost of $18.72.

Audio-visual service costs varied in the population comprehensives from an upper level of $16.04 per student-enrolled in Comprehensive E to $0.80 in Comprehensive C. No salary costs were expanded in Comprehensives A, B, C, D, and G, where the audio-visual function was conducted by teachers generally, instead of specific teacher personnel or technicians being assigned to an audio-visual role.

Television services were provided in four of the eleven population schools with curricular classes offered in Television to students of Comprehensive G only. Television costs varied from $22.56 per student-enrolled in Comprehensive

F to $1.02 in Comprehensive K, resulting in an average cost of $13.95 per student-enrolled in the comprehensive schools providing television services.

Administrative costs in terms of per student-enrolled varied from $53.63 in Comprehensive C to $35.29 in Comprehensive F with an average cost of $41.72 in the population. Comprehensive C costs were high largely because of the appointment of the six department heads to this comprehensive of 614 students. Department heads appointed in the next school had an enrollment of 1,131 students.

The total service function costs per student-enrolled varied from $109.53 in Comprehensive G to $69.59 in Comprehensive D. The average service function cost per student was $92.28 in the population. No economies of scale were evident within the eleven comprehensives in the service function area.

Auxiliary Service Function.

These were activities assigned to teachers but were not orientated to the curricular program, the general service function program, or student supervision activities. They did, however, perform a service function for the students or for the general operation of the school. Table XVI summarizes the costs associated with the auxiliary service function activities within the population, both in total cost and cost per student enrolled.

Auxiliary service function costs varied from $31.60 per student-enrolled in Comprehensive E to $1.78 in Comprehensive A with an average cost per student enrolled in the population of $8.73. The high cost in Comprehensive

TABLE XVI

AUXILLIARY SERVICE FUNCTION COSTS BY AMOUNT, COSTS PER STUDENT ENROLLED AND AGGREGATE FOR POPULATION

COMPREHENSIVES

	A		B		C		D		E		F		G	
	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Totol Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled
Receiving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2853.91	3.29	0.00	0.00	0.00	0.00
Intermural Physicol Education	0.00	0.00	3028.00	4.93	1899.49	3.62	2918.67	6.06	0.00	0.00	0.00	0.00	0.00	0.00
Extra Curricular Physical Ed.	0.00	0.00	1180.00	1.92	475.22	0.91	1079.63	2.24	7548.62	8.70	3191.71	1.91	2139.47	1.31
Extra Curricular Music	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	650.35	0.40
Remedial Reading Instruction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652.50	0.40
Cafeteria Management	1400.37	1.78	0.00	0.00	880.11	1.68	0.00	0.00	3141.01	3.62	0.00	0.00	1831.40	1.12
Group Guidance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9593.70	5.73	56.22	0.03
Internal Substitution	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6571.55	4.03
School Band	0.00	0.00	3873.33	6.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Music Choral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	693.98	0.80	0.00	0.00	0.00	0.00
Adult Education	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Driver Education	0.00	0.00	103.45	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal Grant Accounting	0.00	0.00	1417.45	2.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Continuing Education Program	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3501.77	4.03	0.00	0.00	0.00	0.00
Book Room Duties	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2156.46	2.48	0.00	0.00	0.00	0.00
Laboratory Installation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7098.80	8.18	0.00	0.00	0.00	0.00
Individualized Art	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2837.27	1.69	0.00	0.00
Developmentol English	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	431.84	0.50	0.00	0.00	0.00	0.00
TOTAL	1400.37	1.78	9602.23	15.64	3254.82	6.20	3998.30	8.30	27426.38	31.60	15622.67	9.33	11901.50	7.29

TABLE XVI (Continued

	H		I		J		K		AGGREGATE	
	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled
Receiving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2853.91	0.23
Intermural Physical Education	1082.26	0.69	0.00	0.00	0.00	0.00	1355.16	1.20	10283.56	0.85
Extra Curricular Physical Ed.	9933.57	6.29	7532.21	4.86	9670.22	7.42	5409.67	4.78	48160.32	3.97
Extra Curricular Music	308.96	0.20	4693.33	3.03	1324.40	1.02	0.00	0.00	6977.04	0.57
Remedial Reading Instruction	10903.99	6.91	6077.00	3.92	0.00	0.00	0.00	0.00	17633.49	1.45
Cafeteria Management	3096.67	1.96	3262.32	2.11	863.89	0.66	0.00	0.00	14475.77	1.19
Group Guidance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9649.92	0.79
Internal Substitution	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6571.55	0.54
School Band	2174.00	1.38	0.00	0.00	0.00	0.00	1553.91	1.37	7601.24	0.63
Music Choral	0.00	0.00	0.00	0.00	721.88	0.55	1553.91	1.37	2969.77	0.24
Adult Education	0.00	0.00	0.00	0.00	9827.77	7.54	0.00	0.00	9827.77	0.81
Driver Education	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	103.45	0.01
Federal Grant Accounting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1417.45	0.12
Continuing Education Program	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3501.77	0.29
Book Room Duties	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2156.46	0.18
Laboratory Installation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7098.80	0.58
Individualized Art	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2837.27	0.23
Developmental English	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	431.84	0.04
TOTAL	27499.43	17.42	21564.86	13.92	22408.16	17.20	9872.64	8.73	154,550.94	12.73

E resulted from activities related to the organization of a new school. The two following auxiliary service function activities, with the per student-enrolled cost, were peculiar to this school in the first year of operation: receiving equipment, $3.29; and laboratory installation, $8.18.

The average cost per student-enrolled of the auxiliary service function in the eleven comprehensives was $12.73, with the highest cost function being extra-curricular physical education. This was the cost of the release time given to physical education teachers during the assigned timetable schedule in lieu of this program.

Student Supervision. Supervision time was defined as teacher-student scheduled contact time, in which students were under the direction of, but not instructed by teachers. Three types of supervision were isolated in this study, home room supervision, study room supervision and library supervision. Table XVII presents the aggregated costs, per student-enrolled costs, and total population cost of the student supervision function.

Per student-enrolled supervision costs varied from $40.24 in Comprehensive D to no cost in Comprehensives B and G. The average cost per student enrolled in the population was $10.73. Home room supervision at $6.86, was the supervisional function of greatest expense.

The wide variation of supervisional cost mirrored the priority decisions of both resident and non-resident administrators. The cost incurred within the population indicated of the emphasis placed on the supervisional function within the individual comprehensives.

TABLE XVII

SUPERVISION FUNCTION COSTS BY AMOUNT, COST PER STUDENT-ENROLLED AND AGGREGATE FOR POPULATION

	COMPREHENSIVES											
	A		B		C		D		E		F	
	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled
Home Room Supervision	3,852.17	4.89	0.00	0.00	6,712.85	12.79	10,361.54	21.50	0.00	0.00	3,157.83	1.89
Study Room Supervision	13,405.24	17.03	0.00	0.00	7,791.14	14.84	9,032.90	18.74	0.00	0.00	5,430.59	3.24
Library Supervision	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3,188.35	3.67	0.00	0.00
TOTAL	17,257.41	21.93	0.00	0.00	14,503.99	27.63	19,394.44	40.24	3,188.35	3.67	8,588.42	5.13

	COMPREHENSIVES											
	G		H		I		J		K		All Schools Combined	
	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled	Total Cost	Cost Per Student Enrolled
Home Room Supervision	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	18,382.05	16.25	42,466.44	3.50
Study Room Supervision	0.00	0.00	20,506.70	12.99	11,033.76	7.12	16,098.28	12.35	0.00	0.00	83,298.56	6.86
Library Supervision	0.00	0.00	0.00	0.00	0.00	0.00	1,356.94	1.04	0.00	0.00	4,545.29	0.37
TOTAL	0.00	0.00	20,506.70	12.99	11,033.76	7.12	17,455.22	13.40	18,382.05	16.25	130,310.25	10.73

Combined Resident, Indirect and Implementary Expenditures

Table XVIII presents the resident indirect and implementary expenditures in each school by functional category. The aggregates were divided into two categories, salaries and expenses. The per student-enrolled costs were combined to provide single unit costs for combined resident and implementary expenditures.

In salaries, the highest unit cost per student enrolled was $236.45 in Comprehensive A, and Comprehensive F with $140.06 was the lowest unit cost. The average unit costs for salaries in the combined resident indirect and implementary unit costs was $185.70. The greatest variations between comprehensives in the salary dimension were in the following areas: specific preparation, service function, audio-visual and television, auxiliary service function and supervision function.

The expense dimension with the highest per student-enrolled resident indirect and implementary cost was $196.27 in Comprehensive A with the least cost of $90.00 in Comprehensive D. The population average of resident and implementary expenditures was $129.24.

The combined salary and expenses in the resident indirect and implementary expenditures for the average cost per student-enrolled was $314.94. The range of unit costs was from a high of $432.72 in Comprehensive A to $239.36 in Comprehensive F. The four largest Comprehensives F, G, H, and I and the small Comprehensive, D, had combined resident indirect and implementary expenditures of under $300.00.

TABLE XVIII

COMBINED RESIDENT INDIRECT AND IMPLEMENTARY BY FUNCTIONAL CATEGORY

	A	B	C	D	E	F	G	H	I	J	K	Aggregate
SALARIES												
Specific Preparation by Academic Staff	$ 1,062.52	22,129.44	6,897.64	2,781.53	14,197.84	2,349.30	10,266.15	39,277.50	12,034.43	1,433.83	2,969.75	115,399.93
Service Function												
Guidance	17,264.50	5,790.52	11,692.00	3,350.15	8,540.00	13,694.48	32,512.23	39,229.98	36,849.98	20,693.98	23,392.70	213,010.52
Library	11,133.99	10,471.99	6,143.00	9,526.49	12,140.00	12,519.99	21,464.59	9,863.99	9,007.99	18,299.98	12,390.00	132,962.01
AV & TV					5,533.67	3,678.48	26,082.38			2,156.25	13,789.22	51,240.00
Administration	31,128.23	22,939.41	28,156.50	18,751.95	41,379.66	59,109.13	65,828.94	64,810.47	54,692.02	64,535.62	55,411.25	506,562.18
Auxiliary Service Function by Academic Staff	1,400.37	9,602.23	3,254.82	3,998.30	29,668.35	15,622.67	5,420.95	27,499.44	21,564.86	22,408.16	11,086.70	150,526.85
Supervision by Academic Staff	17,257.41	--	14,503.99	19,394.44	3,188.32	8,588.42	--	20,506.71	11,033.76	17,455.22	17,167.99	129,096.29
Substituted Teachers	1,375.00	1,300.00	--	1,912.00	1,603.65	1,460.69	6,571.55[a]	5,307.73	5,201.91	3,801.00	--	28,542.53
Support Staff	105,461.03	46,222.54	43,310.59	36,826.69	62,730.24	117,580.69	106,566.06	90,004.79	90,519.79	136,251.05	95,558.67	931.029.14
Total	186,083.05	118,456.13	113,958.54	96,541.55	177,981.73	234,603.85	274,712.85	296,497.61	240,900.74	287,035.09	231,766.28	2,258,542.42
Cost Per Student	236.45	192.93	217.06	200.29	205.05	140.06	168.32	187.77	155.52	220.29	204.92	185.96
EXPENSES												
Instructional	68,919.93	38,817.00	20,590.90	13,565.50	77,190.65	97,643.12	132,116.40	91,284.17	86,056.26	104,523.50	100,448.23	831,155.66
Non-Instructional	85,543.19	37,663.00	34,799.29	29,816.67	86,849.99	68,684.74	59,740.94	76,876.66	79,704.59	95,229.24	83,585.89	738,494.20
Total	154,463.12	76,480.00	55,390.19	43,382.17	164,040.64	166,327.86	191,857.34	168,160.83	165,760.85	199,752.74	184,034.12	1,569,649.86
Cost Per Student	196.27	124.56	105.51	89.38	188.99	99.30	117.56	106.49	107.01	153.30	162.72	129.24
Grand Total	340,546.17	194,936.13	169,348.73	139,923.72	342,022.37	400,931.71	466,570.19	464,658.44	406,666.59	486,787.83	415,800.40	3,828,192.28
Cost Per Student	432.72	317.48	322.56	290.30	394.04	239.36	285.89	294.27	262.53	373.59	367.64	315.20

[a] Internal substitution by teaching staff based on 15 minutes per school week per teacher

Non Resident Implementary Expenditures

Table XIX provides the non-resident implementary expenditures within each expenditure series. These included a per student-enrolled cost for each comprehensive as well as a sample aggregate and average per student-enrolled unit cost.

Administration costs varied within the population as a result of the basic structure of the central administration of each comprehensive. Comprehensives F, G, H, and I were schools within urban systems which administered more than one school. Comprehensives A, B, C, E, J, and K were single school administrative units, while Comprehensive D was part of the administrative unit of a school unit. Comprehensive C had the lowest administrative expenditure, $12,038.86, followed by Comprehensive D at $17,929.62. Only these schools did not have locally appointed superintendents, while in the remainder of the population schools the superintendent was locally appointed.

Pupil transportation was an expenditure for Comprehensive D, and represented the cost of transporting students enrolled in the comprehensive from within the school unit. Other comprehensives in the population did not make expenditures for transportation, these costs were paid by other educational jurisdictions which transported students to the comprehensives (Comprehensives A, B, C, E, J, and K). In Comprehensives F, G, H, and I, transportation costs were not a factor.

Fixed charges varied in relation to the size of the comprehensives for the most part. Expenses for student body activity were incurred only in

TABLE XIX

NON-RESIDENT IMPLEMENTARY EXPENDITURES BY FUNCTIONAL CATEGORY

	A	B	C	D	E	F	G	H	I	J	K	Aggregate
EXPENDITURE SERIES												
100 Administration	21,839.50	21,243.89	12,038.86	17,929.62	28,442.76	50,574.76	62,539.98	55,570.21	54,125.38	27,921.58	29,690.34	381,916.88
600 Student Trans.				37,084.00								37,084.00
800 Fixed Charges	16,305.78	13,681.91	6,793.42	4,627.72	9,523.09	21,276.19	19,469.64	17,523.65	15,612.41	16,082.82	28,910.53	164,807.16
1000 Student Body					600.00							600.00
1200 Capital Outlay	3,539.42	30,425.50	8,574.61			411.60			17,151.01		10,781.78	70,883.92
1300 Debt Service	109,241.59	60,214.09	27,806.34	92,394.54	91,415.00	238,785.88	46,251.57	147,327.72	144,390.34		78,300.39	1,036,127.46
1400 Transfer Account						747.00	870.08	117,022.55[a]	114,689.39[a]			1,617.08
	150,926.29	125,565.39	55,213.23	152,035.88	129,980.85	311,795.43	124,131.27	220,421.56	231,279.14	44,004.40	147,683.04	1,693,036.77

[a] Transfer payment to another school board which does nat have taxation priviledges relative to the education of Division IV students. Does not Does not represent an operational expenditure and is not included in the non-resident implementary expenditures.

Comprehensive E which made a direct allocation to the students' council of the comprehensive.

Capital alterations and additions within the school, paid out of current revenue, varied within the population but no set pattern was established.

Transfer accounts, i.e., tuition fees for students attending other educational institutions, were incurred by Comprehensive schools I and G. These students were within the school boundaries of the comprehensives, and would have attended these schools had they not been enrolled in educational institutions elsewhere. The transfer accounts for Comprehensives H and I were shown on Table XVII but were not included as non-resident implementary expenditures. These payments were made to a school administration which did not have taxing privileges but provided Division III, Year III, and Division IV education. The administration of Comprehensives H and I, acted merely as a taxing agency for the non-taxing-privileged school system. Therefore, the transfer account payments of Comprehensives H and I did not represent an operational expenditure.

Debt service varied throughout the population. Comprehensive J made no debt service expenditures, but these were made jointly by the school jurisdictions supplying students to the school. The administration of Comprehensive J provided only the operational administration function within the school and did not exercise taxation privileges. All revenue for this administration was derived from tuition fees paid for each student enrolled.

The non-resident implementary expenditures per student-enrolled varied from $33.17 in Comprehensive J to $315.23 in Comprehensive D, resulting in an overall average cost per student in the population of $139.40.

V. TOTAL EDUCATIONAL PER STUDENT COSTS

This section analyzes specific sub-problems 15, 16, 17 and 18 on page 4 of this study. The total educational expenditure per student-enrolled include direct instructional costs, resident indirect and implementary costs and non-resident implementary costs. The total derived educational costs per student were presented by: (1) curricular program, (2) grade and school, (3) function-object categories, and (4) a curricular-based program-budget format.

Per Student Costs by Curricular Programs

Table XX provides the total educational per student-enrolled costs for each curricular program in two unit costs, per student-course and per student-enrolled. These included direct instructional cost, resident indirect and implementary costs and non-resident indirect and implementary cost.

The "per student-course in program" cost was based on a dollar volume expenditure for the direct instructional cost of all courses in a particular curricular program. This was expressed as a ratio of the total direct instructional cost for all programs and multiplied by the number of student-course enrollments within the particular curricular program. Table XXXVIII in Appendix F provides

TABLE XX

ESTIMATED TOTAL COSTS OF CURRICULAR PROGRAMS BY STUDENT-COURSE AND BY COMPREHENSIVE ENROLLMENT

Curricular Program	A		B		C		D		E		F	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
CHRISTIAN ETHICS												
Direct Costs												
Resident Indirect Costs												
Resident Implement Costs												
Non-resident Indirect and Implementary Costs												
Total Cost Per Student												
ENGLISH												
Direct Costs	56.66	54.07	37.40	71.99	56.25	50.14	31.09	63.47	55.96	63.82	51.65	72.93
Resident Indirect Costs	0.53	0.51	4.44	8.56	1.99	1.78	0.12	0.25	1.52	1.73	0.23	0.23
Resident Implement Costs	47.73	46.67	23.79	48.40	40.54	31.02	23.86	57.47	49.81	55.04	35.90	29.51
Non-resident Indirect and Implementary Costs	23.45	22.94	19.07	38.81	14.40	11.02	27.51	66.30	21.01	23.21	31.00	25.48
Total Cost Per Student	128.37	124.19	84.70	167.76	113.18	93.96	82.58	187.49	128.11	143.80	118.78	128.15
FINE ARTS												
Direct Costs	64.16	15.25	73.79	17.43					59.07	3.87	35.74	31.33
Resident Indirect Costs	15.65	3.38	33.90	8.01					2.39	0.16	5.02	4.40
Resident Implementary Costs	54.04	12.76	46.97	5.94					52.45	3.16	15.64	18.32
Non-resident Indirect and Implementary Costs	26.55	6.27	37.67	4.76					22.11	1.33	13.50	15.82
Total Cost Per Student	160.40	37.66	192.33	36.14					136.02	8.52	69.90	69.87

TABLE XX (Continued)

Curricular Program	G		H		I		J		K	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
CHRISTIAN ETHICS										
Direct Costs	23.94	21.20								
Resident Indirect Costs	0.15	0.14								
Resident Implementary Costs	16.41	28.88								
Non-Resident Indirect and Implementary Costs	4.96	8.73								
Total Cost Per Student	45.46	58.35								
ENGLISH										
Direct Costs	44.84	50.61	96.46	98.54	76.19	79.69	37.02	73.36	84.04	78.32
Resident Indirect Costs			3.65	3.61	0.11	0.11	0.07	0.14	0.83	0.77
Resident Implementary Costs	30.73	36.83	51.57	32.75	38.16	29.48	31.01	76.58	60.53	36.26
Non-Resident Indirect and Implementary Costs	9.30	11.14	29.18	17.87	18.82	18.32	2.99	7.39	23.76	14.23
Total Cost Per Student	84.87	98.58	180.86	152.77	133.28	127.60	71.09	157.47	169.16	129.58
FINE ARTS										
Direct Costs	82.13	9.56	49.93	18.18	39.52	14.39	69.49	13.87	42.59	11.30
Resident Indirect Costs	24.45	2.84	4.07	1.48	2.30	0.84	13.61	2.72	15.83	4.20
Resident Implementary Costs	56.35	3.80	23.93	11.89	19.79	13.24	58.23	7.70	30.72	10.34
Non-Resident Indirect and Implementary Costs	17.05	1.14	13.54	6.40	12.30	8.23	5.61	0.74	12.06	4.06
Total Cost Per Student	179.88	17.34	91.47	37.95	73.91	36.70	146.94	25.03	101.20	29.90

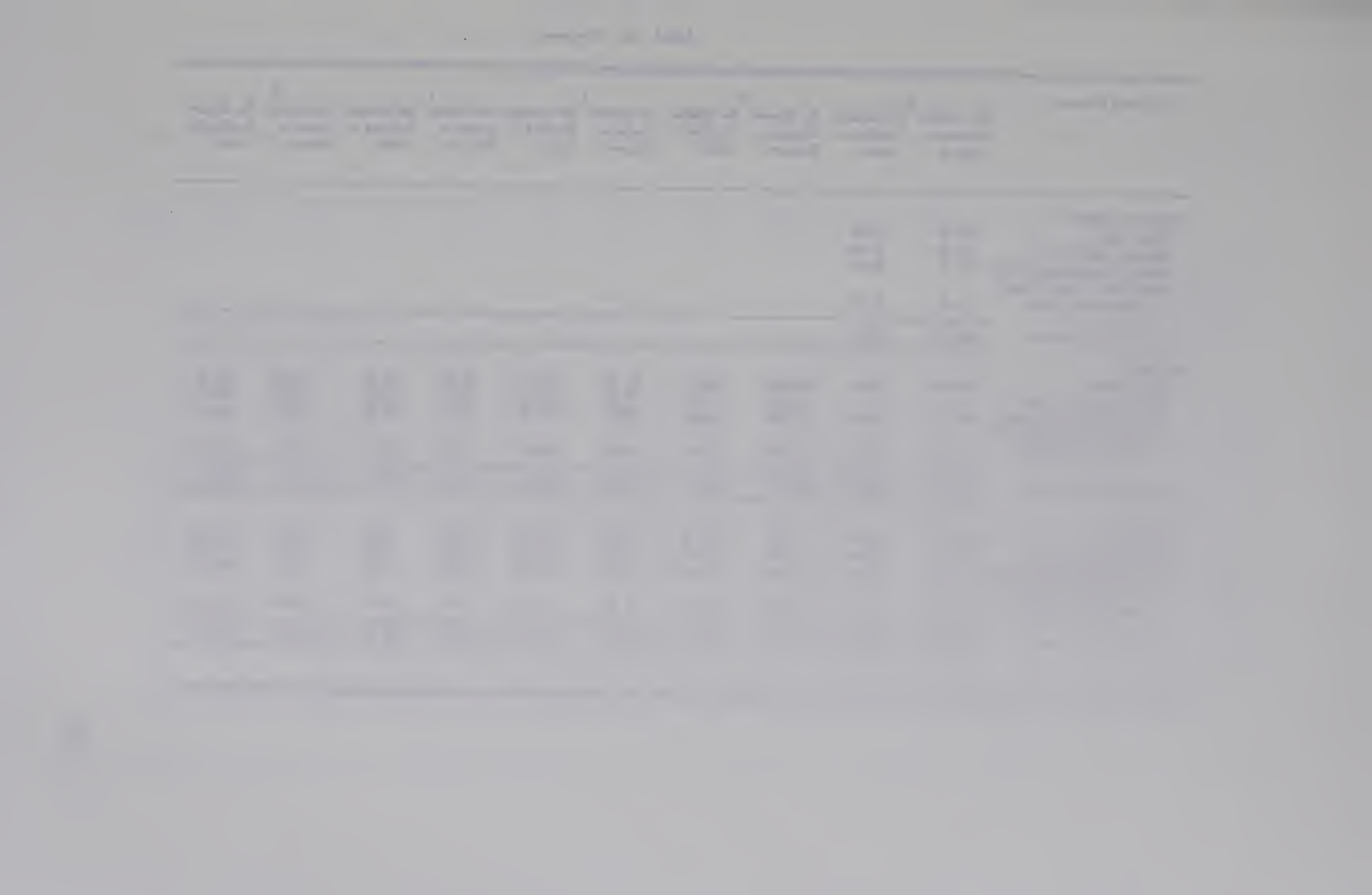


TABLE XX (Continued)

Curriculor Program	A		B		C		D		E		F	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
HOME ECONOMICS												
Direct Costs	59.89	7.61	28.64	14.14	44.22	33.69	77.93	14.71	75.90	18.19	30.85	15.43
Resident Indirect Costs	7.98	1.01	4.02	1.98	1.36	1.03	7.33	1.38	6.11	1.45	5.50	1.72
Resident Implementary Costs	50.37	6.21	18.24	12.42	31.86	26.53	23.86	5.30	67.58	6.03	32.17	10.46
Non-resident Indirect and Implementary Costs	24.75	3.04	14.63	9.96	11.32	9.42	27.51	6.12	28.49	2.54	27.77	9.03
Total Cost Per Student	142.99	17.87	65.53	38.50	88.76	70.67	136.63	27.51	178.08	28.21	96.29	36.64
MATHEMATICS												
Direct Costs	57.34	62.53	34.31	55.04	46.31	51.34	36.02	65.32	48.17	59.00	36.83	70.33
Resident Indirect Costs	0.47	0.51	2.29	3.67	1.07	1.19	0.11	0.19	2.64	3.20		
Resident Implementary Costs	48.26	53.35	21.82	40.34	33.37	38.60	27.64	51.05	42.88	59.13	23.66	39.31
Non-resident Indirect and Implementary Costs	23.73	26.22	17.50	32.35	11.86	13.71	31.88	58.89	18.08	24.93	20.42	34.46
Total Cost Per Student	129.80	142.61	75.92	131.40	92.61	104.84	95.65	175.45	111.77	146.26	83.91	144.10
MODERN LANGUAGES												
Direct Costs	31.60	15.41	36.56	12.51	51.71	18.52	41.94	19.40	63.23	23.89	31.54	39.15
Resident Indirect Costs	0.87	0.42	7.63	2.61	2.13	0.76	2.04	0.94	3.57	1.34		
Resident Implementary Costs	26.72	23.89	23.26	8.59	37.28	12.46	32.15	13.01	56.38	18.25	23.10	25.94
Non-resident Indirect and Implementary Costs	13.12	11.74	18.66	6.89	13.25	4.43	37.08	15.01	23.78	7.70	19.94	22.39
Total Cost Per Student	72.31	51.46	86.11	30.60	104.37	36.17	117.21	48.36	144.91	51.18	74.58	87.48

TABLE XX (Continued)

Curricular Program	G		H		I		J		K	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
HOME ECONOMICS										
Direct Costs	94.32	15.84	50.08	15.06	58.57	17.88	53.03	12.17	67.01	6.61
Resident Indirect Costs	5.87	0.98	4.28	1.31	17.92	5.47	4.74	0.83	2.91	0.30
Resident Implementary Costs	64.68	5.48	28.24	10.06	29.35	8.60	44.38	8.85	45.97	6.09
Non-Resident Indirect and Implementary Costs	19.57	1.66	15.64	5.49	18.24	5.34	4.28	0.85	18.05	2.38
Total Cost Per Student	184.44	23.96	98.24	31.92	124.08	37.29	106.43	22.70	133.94	15.38
MATHEMATICS										
Direct Costs	49.61	62.68	45.92	59.85	49.29	62.69	42.24	53.55	46.27	54.41
Resident Indirect Costs	0.21	0.27	3.52	4.59	0.81	1.04	0.03	0.03	0.06	0.07
Resident Implementary Costs	34.00	41.25	29.40	42.68	24.67	35.56	35.36	49.00	33.35	44.49
Non-Resident Indirect and Implementary Costs	10.29	12.48	16.63	23.28	15.33	22.27	3.41	4.72	13.09	17.98
Total Cost Per Student	94.11	116.66	95.47	130.50	90.10	121.56	81.04	107.30	92.71	116.95
MODERN LANGUAGES										
Direct Costs	61.69	25.55	48.84	28.77	50.59	38.31	51.26	26.24	45.21	23.11
Resident Indirect Costs	0.69	0.28	5.89	3.46	0.94	0.72	1.17	0.60	1.83	0.93
Resident Implementary Costs	42.48	13.52	27.49	19.29	25.32	21.36	42.94	19.77	32.61	19.89
Non-resident Indirect and Implementary Costs	12.84	4.09	15.56	10.52	15.73	13.27	4.14	1.90	12.80	7.81
Total Cost Per Student	117.70	43.44	97.78	62.04	92.58	73.66	99.51	48.51	92.36	51.74

TABLE XX (Continued)

Curricular Program	A		B		C		D		E		F	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
PHYSICAL EDUCATION												
Direct Costs	56.58	31.78	21.23	19.36	28.80	26.77	20.64	23.30	20.87	10.80	25.74	26.09
Resident Indirect Costs	6.33	3.56	2.83	2.37	2.43	2.26	0.99	1.11	4.56	2.34	2.73	1.69
Resident Implementary Costs	42.67	27.48	14.71	21.03	20.76	32.35	15.85	31.77	18.57	24.97	21.04	24.92
Non-resident Indirect and Implementary Costs	23.42	13.50	11.80	16.87	7.37	11.49	18.28	36.65	7.82	10.93	18.17	21.19
Total Cost Per Student	129.00	76.32	50.57	59.63	59.36	72.87	55.76	92.83	51.82	49.04	67.68	73.89
SCIENCE												
Direct Costs	56.87	73.79	36.37	51.78	46.46	56.19	40.22	58.49	57.13	77.27	47.67	66.67
Resident Indirect Costs	7.24	9.49	5.56	7.91	2.86	3.50	4.18	6.09	3.51	4.70	4.23	5.91
Resident Implementary Costs	47.92	63.50	23.14	35.77	33.48	42.09	30.85	40.93	50.86	65.31	23.87	28.87
Non-resident Indirect and Implementary Costs	23.55	31.20	18.56	28.69	11.89	14.95	35.59	47.21	21.45	27.54	20.61	24.93
Total Cost Per Student	135.58	177.98	83.63	124.15	94.69	116.73	110.84	152.72	132.95	174.82	95.93	126.38
SOCIAL STUDIES												
Direct Costs	41.95	55.38	45.69	50.09	45.11	57.39	37.05	44.59	46.54	49.76	46.17	52.26
Resident Indirect Costs	1.28	1.69	3.47	3.81	2.06	2.62	1.86	2.24	4.99	5.28	0.23	0.25
Resident Implementary Costs	35.36	64.59	29.06	26.40	32.52	44.28	28.42	33.88	41.42	51.60	23.46	23.33
Non-resident Indirect and Implementary Costs	17.37	31.74	23.30	22.10	11.55	15.73	32.79	39.08	17.47	21.76	20.25	20.14
Total Cost Per Student	95.96	153.40	101.52	102.40	91.24	120.02	100.12	119.79	110.42	128.40	90.11	95.99

TABLE XX (Continued)

Curricular Program	G		H		I		J		K	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Progrom	Per Student Enrolled in School
PHYSICAL EDUCATION										
Direct Costs	30.97	18.29	42.24	26.78	36.67	27.41	25.25	18.66	22.97	16.33
Resident Indirect Costs	4.02	2.37	2.46	1.56	2.24	1.67	1.03	0.76	5.87	4.17
Resident Implementary Costs	21.23	19.28	23.81	20.75	18.35	21.07	21.16	28.56	16.56	27.67
Non-resident Indirect and Implementary Costs	6.42	5.83	13.47	11.32	11.40	13.09	2.04	2.76	6.50	10.86
Total Cost Per Student	62.64	45.77	81.98	60.41	68.66	63.24	49.48	50.74	51.90	59.03
SCIENCE										
Direct Costs	63.70	64.33	46.83	51.84	52.15	71.50	42.15	52.73	46.22	61.17
Resident Indirect Costs	2.06	2.08	5.18	5.74	2.39	3.27	1.37	1.73	2.53	3.35
Resident Implementary Costs	31.19	32.95	26.37	36.25	26.11	38.66	35.31	48.37	33.30	51.56
Non-resident Indirect and Implementary Costs	9.44	9.97	14.91	19.78	16.22	24.02	3.40	4.66	13.07	20.24
Total Cost Per Student	106.39	109.33	93.29	113.61	96.87	137.45	82.23	107.54	95.12	136.32
SOCIAL STUDIES										
Direct Costs	41.41	41.03	49.40	54.03	54.28	61.96	41.71	40.27	44.63	55.76
Resident Indirect Costs	6.56	6.50	3.66	3.99	0.62	0.71	0.17	0.16	0.34	0.43
Resident Implementary Costs	28.39	32.33	27.84	35.82	27.18	32.17	34.95	32.32	32.16	48.66
Non-resident Indirect and Implementary Costs	8.59	9.78	15.75	19.54	16.88	19.99	3.37	3.60	12.63	19.10
Total Cost Per Student	84.95	89.64	96.65	113.38	98.96	114.83	80.20	76.35	89.76	123.95

TABLE XX (Continued)

Curricular Program	A		B		C		D		E		F	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
AGRICULTURE												
Direct Costs	443.33	7.32	75.66	9.24	94.97	9.79						
Resident Indirect Costs	81.87	1.35	15.72	1.92	16.40	1.69						
Resident Implementary Costs	373.32	0.82	48.01	3.06	68.49	3.58						
Non-resident Indirect and Implementary Costs	183.43	0.40	38.51	2.45	24.33	1.27						
Total Cost Per Student	1081.95	9.89	177.90	16.67	204.19	16.33						
BUSINESS EDUCATION												
Direct Costs	47.29	58.47	51.26	31.39	51.33	39.31	34.00	24.97	51.67	41.79	38.87	13.41
Resident Indirect Costs	4.05	5.01	15.72	1.92	2.98	2.28	1.21	0.89	7.80	6.20	8.02	2.77
Resident Implementary Costs	50.29	64.59	32.60	15.40	36.99	26.67	26.09	20.67	46.02	39.02	19.49	7.22
Non -resident Indirect and Implementary Costs	19.58	29.93	28.05	12.35	13.14	9.47	30.11	23.84	19.40	16.45	16.83	6.24
Total Cost Per Student	121.21	157.80	127.63	61.06	104.44	77.73	91.41	76.37	124.89	103.55	83.21	29.64
COMMERCIAL COOKING												
Direct Costs	124.48	6.49			82.25	2.19			40.83	2.78		
Resident Indirect Costs	27.07	1.41			25.56	0.68			37.20	2.50		
Resident Implementary Costs	104.88	2.53			58.83	0.92			36.57	3.27		
Non- resident Indirect and Implementary Costs	51.54	1.24			20.90	0.33			15.42	1.37		
Total Cost Per Student	307.97	11.67			187.54	4.12			130.12	9.92		

TABLE XX (Continued)

Curricular Program	G		H		I		J		K	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
AGRICULTURE										
Direct Costs							80.89	9.43	88.76	8.16
Resident Indirect Costs							16.35	1.91	36.61	3.37
Resident Implementary Costs							67.81	4.51	64.02	3.59
Non-Resident Indirect and Implementary Costs							6.54	0.43	25.13	1.41
Total Cost Per Student							171.59	16.28	214.52	16.53
BUSINESS EDUCATION										
Direct Costs	43.54	27.43	46.41	34.89	54.21	31.74	38.80	37.37	41.44	45.62
Resident Indirect Costs	8.61	5.42	2.89	2.17	2.28	1.33	1.61	1.55	1.16	1.28
Resident Implementary Costs	29.85	20.36	26.14	24.61	27.13	16.51	37.20	32.49	29.85	42.87
Non-Resident Indirect and Implementary Costs	9.12	6.16	14.78	13.42	16.85	10.26	3.13	3.59	11.72	16.83
Total Cost Per Student	91.12	59.37	90.22	75.01	100.47	59.89	80.74	75.00	84.17	106.60
COMMERCIAL COOKING										
Direct Costs	74.39	2.64	53.20	3.77	84.43	1.14	111.28	3.98		
Resident Indirect Costs	54.47	1.94	2.75	0.19	1.31	0.02	18.93	0.68		
Resident Implementary Costs	50.93	1.16	29.93	2.32	42.53	0.38	92.18	1.40		
Non-Resident Indirect and Implementary Costs	15.41	0.35	16.94	1.27	26.43	0.24	8.89	0.14		
Total Cost Per Student	195.20	6.09	102.82	7.55	154.70	1.78	231.28	6.20		

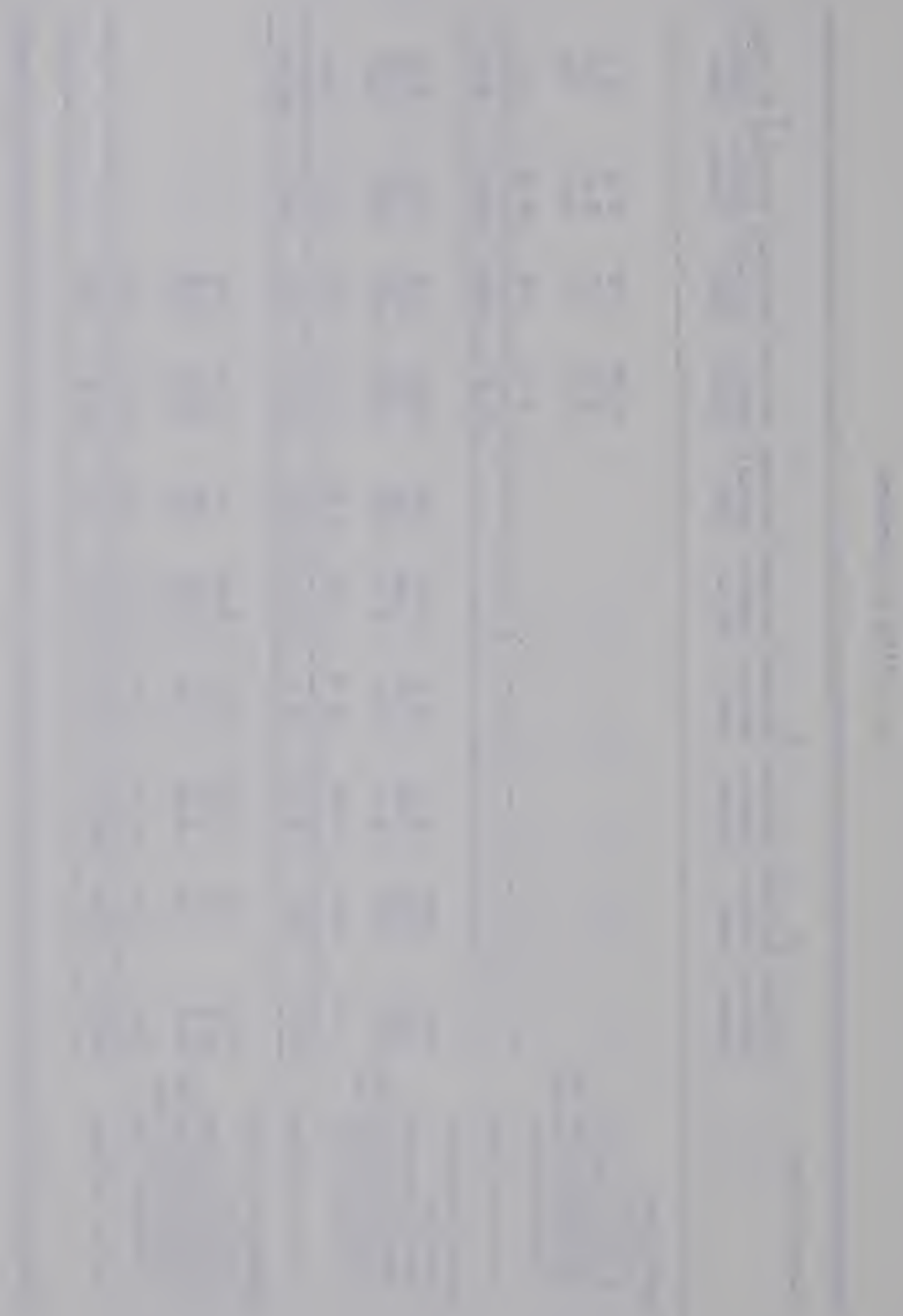


TABLE XX (Continued)

Curricular Program	A		B		C		D		E		F	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
COSMETOLOGY												
Direct Costs	179.66	9.59							21.14	0.66		
Resident Indirect Costs	14.92	0.80										
Resident Implementary Costs	151.58	1.99							18.27	1.49		
Non-resident Indirect and Implementary Costs	74.39	0.98							7.70	0.63		
Total Cost Per Student	420.35	13.36							47.11	2.78		
DRAFTING												
Direct Costs	192.33	12.95	54.37	11.87	75.04	9.01	69.98	10.02	166.49	4.99		
Resident Indirect Costs	25.10	1.69	8.71	1.90	7.90	0.95	1.98	0.28	45.85	1.36		
Resident Implementary Costs	162.27	3.28	32.25	5.48	54.02	4.17	53.66	4.01	148.20	1.46		
Non-resident Indirect and Implementary Costs	79.93	1.61	27.73	4.39	19.19	1.48	61.91	4.63	62.49	0.61		
Total Cost Per Student	459.43	14.64	123.06	23.64	156.15	15.61	187.53	18.94	423.03	8.42		
ELECTRICAL												
Direct Costs	254.37	17.13	233.71	14.84	78.59	11.08	68.99	10.06	72.71	6.53		
Resident Indirect Costs	33.70	2.67	41.86	2.66	14.72	2.07	3.18	0.51	10.42	0.93		
Resident Implementary Costs	214.43	3.28	148.53	1.58	56.70	15.51	48.27	4.48	64.81	4.33		
Non-resident Indirect and Implementary Costs	105.36	1.61	119.13	1.27	20.15	1.75	55.68	5.17	27.33	1.82		
Total Cost Per Student	607.86	24.69	543.23	20.43	170.16	19.81	176.12	20.22	175.27	13.61		

TABLE XX (Continued)

Curricular Program	G		H		I		J		K	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
COSMETOLOGY										
Direct Costs	62.53	3.75					79.97	8.16	108.06	9.36
Resident Indirect Costs	16.03	0.96					20.83	2.13	3.26	0.28
Resident Implementary Costs	42.70	1.96					66.86	3.95	77.92	3.35
Non-Resident Indirect and Implementary Costs	12.92	0.59					6.45	0.38	30.59	1.31
Total Cost Per Student	134.18	7.26					174.11	14.62	219.83	14.30
DRAFTING										
Direct Costs	139.96	4.97	91.57	8.93	57.27	15.45	55.53	3.49	120.63	9.71
Resident Indirect Costs	8.19	0.29	11.07	1.08	0.44	0.12	12.75	0.30	15.45	1.24
Resident Implementary Costs	96.90	1.16	51.68	3.20	27.78	7.62	46.72	2.45	86.81	3.12
Non-Resident Indirect and Implementary Costs	29.32	0.35	29.24	1.74	17.26	4.73	4.51	0.24	34.08	1.23
Total Cost Per Student	274.37	6.77	183.56	14.95	102.75	27.92	119.51	6.48	256.97	15.30
ELECTRICAL										
Direct Costs	74.93	2.94	101.71	9.01	115.50	3.73	71.19	3.78	295.54	13.30
Resident Indirect Costs	45.80	1.80	12.10	1.07	35.80	1.16	28.69	1.39	65.48	4.63
Resident Implementary Costs	51.28	1.28	57.43	2.89	58.06	0.91	65.87	1.85	135.43	2.76
Non-Resident Indirect and Implementary Costs	15.52	0.38	32.49	1.58	36.07	0.56	6.35	0.18	53.17	1.08
Total Cost Per Student	187.53	6.40	203.73	14.55	246.43	6.36	172.10	7.20	549.62	21.77



TABLE XX (Continued)

Curricular Program	A		B		C		D		E		F	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
GENERAL												
Direct Costs	65.87	2.43			38.26	17.05					36.69	16.71
Resident Indirect Costs											14.54	3.06
Resident Implementary Costs	55.07	1.79			27.56	15.51					39.69	8.80
Non-resident Indirect and Implementary Costs	27.06	0.88			9.79	5.51					34.27	7.59
Total Cost Per Student	148.00	5.10			75.61	29.19					125.19	36.16
MECHANICAL												
Direct Costs	182.09	20.13	157.85	21.08	68.85	19.93	43.94	10.58	66.31	13.68		
Resident Indirect Costs	83.58	9.24	30.84	4.96	15.98	4.63	10.82	2.60	26.16	5.34		
Resident Implementary Costs	153.58	5.43	100.43	3.37	49.58	6.57	33.74	6.81	59.07	9.94		
Non-resident Indirect and Implementary Costs	75.46	2.67	80.54	2.70	17.61	2.33	38.94	7.85	24.91	4.19		
Total Cost Per Student	494.71	37.47	369.66	32.11	152.02	33.46	127.44	27.84	176.45	33.15		
MEDIA TECHNOLOGY												
Direct Costs												
Resident Indirect Costs												
Resident Implementary Costs												
Non-resident Indirect and Implementary Costs												
Total Cost Per Student												

TABLE XX (Continued)

Curricular Program	G		H		I		J		K	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
GENERAL										
Direct Costs	89.50	19.52			84.06	23.55	83.00	14.40		
Resident Indirect Costs					0.17	0.05				
Resident Implementary Costs	61.30	7.11			42.10	7.90	69.62	6.69		
Non-Resident Indirect and Implementary Costs	18.55	2.15			26.17	4.91	6.72	0.65		
Total Cost Per Student	169.35	28.87			152.50	36.41	159.34	21.74		
MECHANICAL										
Direct Costs	121.98	8.89	114.48	22.69	85.95	15.70	104.20	31.67	82.22	27.37
Resident Indirect Costs	47.61	3.47	30.97	6.14	24.51	4.48	17.78	5.40	22.95	7.55
Resident Implementary Costs	80.77	2.39	64.54	6.50	43.00	5.14	87.29	11.76	59.96	12.81
Non-Resident Indirect and Implementary Costs	25.35	0.72	36.51	3.54	26.72	3.20	8.42	1.13	23.54	5.03
Total Cost Per Student	275.71	15.47	246.50	38.87	180.18	28.52	217.69	49.96	188.67	52.76
MEDIA TECHNOLOGY										
Direct Costs	92.72	2.84	78.38	1.48	66.19	7.65			34.14	3.74
Resident Indirect Costs	7.00	2.05	11.97	0.23	2.84	0.33			24.57	4.26
Resident Implementary Costs	63.18	1.01	44.44	0.61	33.06	3.27				
Non-Resident Indirect and Implementary Costs	19.11	0.30	25.14	0.34	20.54	2.03			9.64	1.67
Total Cost Per Student	182.01	6.20	159.93	2.66	122.63	13.28			68.35	9.67



TABLE XX (Continued)

Curricular Program	A		B		C		D		E		F	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
STRUCTURAL												
Direct Costs			168.51	11.25	103.46	8.27	80.53	11.53	245.11	4.52		
Resident Indirect Costs			37.30	2.49	14.62	1.17	2.39	0.34	15.63	0.29		
Resident Implementary Costs			106.92	1.68	74.74	2.78	53.66	4.01	217.70	0.88		
Non-resident Indirect and Implementary Costs			85.75	1.35	26.55	0.99	61.91	4.63	91.80	0.37		
Total Cost Per Student			398.48	16.77	219.37	13.21	205.63	20.51	570.24	6.06		
TECHNOLOGY												
Direct Costs											216.82	21.62
Resident Indirect Costs											37.23	3.71
Resident Implementary Costs											108.56	2.09
Non-resident Indirect and Implementary Costs											93.73	1.81
Total Cost Per Student											456.34	29.23
VOCATIONAL A												
Direct Costs	182.09	20.13							149.32	17.37		
Resident Indirect Costs									14.53	1.67		
Resident Implementary Costs	41.85	12.68							132.76	5.61		
Non-resident Indirect and Implementary Costs	24.04	6.23							55.98	2.37		
Total Cost Per Student	247.98	39.04							352.59	27.02		

TABLE XX . (Continued)

Curricular Program	G		H		I		J		K	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
STRUCTURAL										
Direct Costs	152.01	2.88	111.12	6.82	185.80	7.07	158.87	3.78	127.81	9.94
Resident Indirect Costs	63.19	1.20	27.60	1.70	24.98	0.95	40.24	1.20	21.89	1.70
Resident Implementary Costs	104.54	0.63	62.47	2.02	92.73	1.08	105.24	1.15	91.91	3.02
Non-Resident Indirect and Implementary Costs	31.63	0.19	35.34	1.10	57.62	0.67	10.15	0.11	36.08	1.19
Total Cost Per Student	351.37	4.90	236.53	11.64	361.13	9.77	314.50	6.24	277.69	15.85
TECHNOLOGY										
Direct Costs			135.84	18.58						
Resident Indirect Costs			0.43	0.06						
Resident Implementary Costs			76.50	4.48						
Non-Resident Indirect and Implementary Costs			43.27	2.44						
Total Cost Per Student			256.04	25.56						
VOCATIONAL A										
Direct Costs							152.38	10.88	84.25	27.34
Resident Indirect Costs							21.85	1.56	2.29	0.74
Resident Implementary Costs							127.50	2.76	60.68	12.64
Non-Resident Indirect and Implementary Costs							12.30	0.27	23.82	4.96
Total Cost Per Student							314.03	15.47	171.04	45.68

TABLE XX (Continued)

Curricular Program	A		B		C		D		E		F	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
DRIVER EDUCATION												
Direct Costs			11.77	4.00								
Resident Indirect Costs												
Resident Implementary Costs			7.12	13.29								
Non-resident Indirect and Implementary Costs			5.71	7.21								
Total Cost Per Pupil			24.41	20.74								
GUIDANCE												
Direct Costs			7.91	4.83								
Resident Indirect Costs												
Resident Implementary Costs			5.01	22.66								
Non-resident Indirect and Implementary Costs			4.01	12.31								
Total Cost Per Pupil			17.23	33.85								

TABLE XX . (Continued)

Curricular Program	G		H		I		J		K	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
DRIVER EDUCATION										
Direct Costs										
Resident Indirect Costs										
Resident Implementary Costs										
Non-Resident Indirect and Implementary Costs										
Total Cost Per Student										
GUIDANCE										
Direct Costs										
Resident Indirect Costs										
Resident Implementary Costs										
Non-Resident Indirect and Implementary Costs										
Total Cost Per Student										

the proration ratio for student-course-in-program cost for each curricular program in each comprehensive, based on direct instructional dollar volume. The unit costs derived were actual costs per student course, as equivalent course units were not used. Therefore, any comparison between curricular programs or between comprehensives must be computed on the basis of the different credit ratings within each curricular program. For example, to compare the English program to the fine arts program in Comprehensive A, a two-to-one ratio must be considered. All English courses in Comprehensive A were two credit classes, while fine arts courses were one credit.

Table XXI presents the per student-course unit cost range in Total Educational Cost and an arithmetic mean for the population. The academic curricular program with the highest total educational unit cost was fine arts. Home economics and mathematics were in the next highest level at over $120.00. Christian Ethics had the lowest total educational unit cost, due to the relatively low average salaries of Christian Ethics teachers and the high class enrollments.

Agriculture and technology curricular programs had the highest unit cost in the vocational-technical programs due, primarily, to high direct instructional costs, high indirect instructional costs, and the result of low enrollments in the courses offered in these programs. Business education was the curricular program with the lowest unit cost.

Three cost groups were observed which did not deviate substantially from those observed in the direct instructional costs. Agriculture, technology,

TABLE XXI

TOTAL EDUCATION UNIT COST PER STUDENT-COURSE
RANGE AND ARITHMETIC AVERAGE BY CURRICULAR PROGRAM

Curricular Program	Student-Course Unit Cost		
	Minimum	Maximum	Average
Christian Ethics	$ 45.46	$ 45.46	$ 45.46
English	71.09	180.86	117.73
Fine Arts	69.90	192.33	166.37
Home Economics	65.53	184.44	123.22
Mathematics	75.92	129.80	124.53
Modern Languages	72.31	144.96	99.59
Physical Education	49.48	129.00	66.26
Science	82.23	132.95	102.50
Social Studies	80.20	123.95	94.58
Agriculture	171.59	1081.95	370.03
Business Education	80.74	124.89	99.93
Commercial Cooking	102.82	307.97	187.09
Cosmetology	47.11	420.35	199.12
Drafting	102.75	459.43	228.64
Electrical	170.16	607.86	303.21
General	75.61	159.34	138.33
Mechanical	127.44	494.71	242.89
Media	68.35	182.01	133.23
Structural	205.63	398.48	326.10
Technology	256.04	456.34	356.19
Vocational	171.04	352.59	271.41
Driver Education	24.41	24.41	24.41
Guidance	17.23	17.23	17.23

structural and electrical were in the highest-cost group. The middle cost programs were commercial cooking, cosmetology, drafting, general, and Vocational A, in the vocational-technical subjects and home economics and mathematics in the academic subjects. The least-cost programs were Christian Ethics, English, modern languages, physical education, science and social studies in the academic area and business education in the vocational-technical programs.

On an individual basis, Comprehensive A had generally high program unit costs. The total program costs in other comprehensives varied over a wide range as a result of teachers' salaries, class enrollments, and resident and non-resident implementary costs.

A second unit cost is presented in Table XXI, the "per student-enrolled unit cost by curricular program." This unit cost identified the relative unit cost of offering a particular curricular program in the comprehensives. The unit cost mirrored the proportional enrollment emphasis given to the courses, and reflected the unit cost of offering the program within the total program cost of the school.

Table XXII provides the range and arithmetic mean of the Total Educational Cost per student-enrolled, based on student enrollment.

In this instance, the usual cost trend was reversed on the basis of student enrollment. The courses with the lowest enrollment produced the lowest per student-enrolled costs. The lowest-cost group included commercial cooking, media, structural, electrical, drafting, cosmetology, and agriculture. The highest cost group contained English, mathematics, science, social studies and

TABLE XXII

TOTAL EDUCATIONAL UNIT COST PER STUDENT-ENROLLED
RANGE AND ARITHMETIC AVERAGE BY CURRICULAR PROGRAMS

Curricular Program	Student-Enrolled Unit Cost		
	Minimum	Maximum	Average
Christian Ethics	58.35	58.35	58.35
English	93.96	167.76	137.39
Fine Arts	8.52	69.87	30.45
Home Economics	15.38	70.67	29.70
Mathematics	104.84	144.10	130.69
Modern Languages	30.60	116.95	53.15
Physical Education	49.04	92.83	63.98
Science	82.23	174.82	134.27
Social Studies	80.20	153.40	112.56
Agriculture	9.89	16.67	15.14
Business Education	59.89	157.80	80.18
Commercial Cooking	4.12	11.67	6.76
Cosmetology	2.78	14.62	10.46
Drafting	6.48	27.92	15.26
Electrical	6.36	24.69	15.50
General	5.10	36.41	26.25
Mechanical	15.49	52.76	34.96
Media	2.66	13.28	7.95
Structural	4.90	20.51	11.66
Technology	25.56	29.23	27.40
Vocational	15.47	45.68	31.80
Driver Education	20.74	20.74	20.74
Guidance	33.85	33.85	33.85

business education, which were the programs with the highest student enrollment.

This Table revealed the general pattern of expenditure in the various curricular programs within the comprehensives, determined by student enrollment. All academic courses, with the exception of fine arts and home economics, received greater student enrollment emphasis than the vocational-technical courses, with the exception of business education.

Per Student Costs by Grade and Division

Table XXIII provides a breakdown of the per student-enrolled Total Educational Costs by grade, grade division and comprehensive.

Comprehensive C was the only school offering a grade eight program. The total education cost for students in grade eight was $847.15. In the four comprehensives offering a complete grade nine program, the average cost per student-enrolled was $841.48. Costs within individual comprehensives ranged from $704.92 in Comprehensive G to $958.32 in Comprehensive I. This variation in costs resulted mainly from direct instructional costs. In the Total Educational Cost for Division III, the average per student enrolled was $842.37.

Division IV grade ten Total Education Costs per student-enrolled varied from $1,073.10 in Comprehensive A to $741.34 in Comprehensive G with an average grade ten educational cost of $890.23 for the population. Grade eleven costs ranged from $1,125.83 per student-enrolled in Comprehensive A to $721.75 in Comprehensive G with an average cost per student-enrolled of $886.09 for all grade eleven students in the population. Grade twelve Total

TABLE XXIII

ESTIMATED TOTAL PER-STUDENT ENROLLED EDUCATIONAL COSTS BY GRADE AND SCHOOL

	COMPREHENSIVES										
	A	B	C	D	E	F	G	H	I	J	K
GRADE 8											
Direct Cost						421.65					
Resident Indirect Cost						23.75					
Resident Implementary Cost						215.61					
Non-resident Implementary Cost						186.14					
Cost Per Student						847.15					
GRADE 9											
Direct Cost						440.20	342.98	476.52	546.36		
Resident Indirect Cost						23.75	34.46	38.42	22.38		
Resident Implementary Cost						215.61	251.42	255.86	240.27		
Non-resident Implementary Cost						186.14	76.06	139.60	149.31		
Cost Per Student						865.70	704.92	910.40	958.32		
GRADE 10											
Direct Cost	448.62	346.23	425.46	419.03	460.51	381.79	379.40	459.34	473.11	444.21	422.53
Resident Indirect Cost	42.42	62.50	26.59	16.85	38.90	23.75	34.46	38.42	22.38	23.59	35.02
Resident Implementary Cost	390.29	254.98	295.99	273.44	355.13	215.61	251.42	255.86	240.27	350.00	332.61
Non-resident Implementary Cost	191.77	204.50	105.17	315.43	149.75	186.14	76.16	139.60	149.31	33.77	130.58
Cost Per Student	1073.10	868.21	853.21	1024.75	1004.29	807.29	741.34	893.22	885.07	851.57	920.74



TABLE XXIII (Continued)

	COMPREHENSIVES										
	A	B	C	D	E	F	G	H	I	J	K
GRADE 11											
Direct Cost	501.35	432.99	382.40	324.07	379.52	406.35	359.81	424.35	450.16	438.81	494.60
Resident Indirect Cost	42.42	62.50	26.59	16.85	39.90	23.75	34.46	38.42	22.38	23.59	35.02
Resident Implementary Cost	390.29	254.98	295.99	273.44	353.13	215.61	251.42	255.86	240.27	350.00	332.61
Non-resident Implementary Cost	191.77	204.50	105.17	315.43	149.75	186.14	76.06	139.60	149.31	33.77	130.58
Cost Per Student	1125.83	954.91	810.15	929.79	923.30	831.85	721.75	858.23	862.12	846.17	992.81
GRADE 12											
Direct Cost	499.57	393.99	397.14	324.97	348.08	430.53	376.74	446.79	459.12	364.87	465.47
Resident Indirect Cost	42.42	62.50	26.59	16.85	38.90	23.75	34.46	38.42	22.38	23.59	35.02
Resident Implementary Cost	390.29	254.98	295.99	273.44	355.13	215.61	251.42	255.86	240.27	350.00	332.61
Non-resident Implementary Cost	191.77	204.50	105.17	315.43	149.75	186.14	76.06	139.60	149.31	33.77	130.58
Cost Per Student	1124.05	915.98	824.89	930.69	891.86	856.03	738.68	880.67	871.08	772.23	963.68
AGGREGATED PER STUDENT COST											
Division III						857.00	704.87	910.40	958.32		
Division IV	1087.74	922.81	838.40	962.16	942.70	855.38	738.68	880.67	871.06	825.16	959.79
Division III and IV	1087.74	922.81	838.40	962.16	942.70	856.05	728.65	888.09	891.73	825.16	959.79



Educational Costs per student-enrolled averaged $878.87 in the population with variation of from $1,124.05 in Comprehensive A to $738.68 in Comprehensive G. The Division IV per student-enrolled total educational cost ranged from $1,087.40 in Comprehensive A to $738.68 in Comprehensive G with an average per student-enrolled cost of $883.93.

The Total Educational Cost per student-enrolled in Division III and IV in the population was $882.03.

A distinct pattern of total educational expenditure emerged as a result of the findings. Comprehensive A had the highest total education grade costs and Comprehensive G had the lowest grade costs. Grade costs in Comprehensives D and E were greater in grade ten than in grades eleven and twelve mainly as a result of the grade ten program being the most highly developed program in these comprehensives, which began full operation in the 1970-1971 school year.

As in sub-problem seven the derived total per student costs were of little value because of the failure to account for three factors in grade enrollment data: (1) the lack of a standard unit for a grade-enrolled student, (2) the practice of students taking courses at grade levels other than the grade level in which they are enrolled, and (3) the practice of administrators designating students enrolled in the highest grade in which they took classes. These factors combined to produce decreasing costs from grade ten to grade twelve and from grade eight to grade nine rather than the opposite trend which was established in the analysis of direct instructional cost.

Total Estimated per Student-Enrolled Costs by a Modified Function-Object-Expenditure Classification

Table XXIV was derived from the aggregated cost figures given in Table XL (Appendix G). Table XXIV converted the expenditure figures in Table XL to unit costs and provided a percentage ratio showing the relation of the expenditure in each category to the total unit cost for each comprehensive. Those expenditure series in Figure 1 pages 35 and 36 which had no cost entries were omitted in this table, e.g. Attendance services.

Expenditure Series 200, Instruction costs amounted to a population average of $606.87 per student-enrolled, constituting 68.80 per cent of the total expenditure. Total instruction costs varied from $688.88 in Comprehensive A to $526.41 in Comprehensive D, with an allied percentage variation from 78.39 per cent in Comprehensive J to 54.71 per cent in Comprehensive D. Comprehensive D was the only one in the population charged with pupil transportation costs, resulting in a low instructional percentage. Comprehensive J was not charged with debt service, resulting in the high instructional percentage.

Teachers salaries 211, included the following costs, direct instructional, specific preparation, auxiliary service function, and supervisional costs. This category varied from 48.62 per cent in Comprehensive E to 65.03 per cent in Comprehensive C with an average of 52.19 per cent. The cost varied from $410.57 per student-enrolled in Comprehensive D to $582.00 in Comprehensive K with a resulting average of $460.39.

Salaries of local administrators, which includes all administrative salary

TABLE XXIV

AVERAGE ESTIMATED PER STUDENT-ENROLLED COSTS IN EACH OF THE COMPREHENSIVE SCHOOLS BY A MODIFIED FUNCTION-OBJECT EXPENDITURE CLASSIFICATION

Expenditure Series	A		B		C		D		E		F	
	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment
100 ADMINISTRATION	2.55	27.75	3.75	34.60	2.73	22.93	3.87	37.19	3.47	32.77	3.52	30.19
200 INSTRUCTION	51.83	563.88	55.95	516.36	65.03	545.22	49.51	476.34	56.20	529.85	58.35	499.52
210 Salaries												
211 Teachers	44.89	488.24	49.03	452.50	54.58	457.62	42.69	410.74	48.62	458.35	52.14	446.38
212 Administrators	3.63	39.55	4.05	37.36	6.40	53.63	4.04	38.90	5.06	47.67	4.12	35.29
213 Other Instr. Staff												
a) Library	1.30	14.15	1.85	17.06	1.40	11.70	2.05	19.76	1.48	13.99	0.87	7.47
b) AV & TV											0.26	2.20
c) Guidance	2.02	21.94	1.02	9.43	2.65	22.27	0.72	6.95	1.04	9.84	0.95	8.18
d) Other												
1. Internal Sub												
2. Sub Teacher	0.16	1.75	0.23	2.12			0.41	3.97	0.19	1.85	0.10	0.87
215 Clerical & Bus Sup. Staff	3.28	35.68	1.73	15.93	2.03	17.02	1.85	17.75	1.99	18.51	2.00	17.12
216 AV & TV Technicians											1.89	16.21
230 Library Equipment & Sup.	1.30	14.16	0.93	8.57	0.15	1.27	0.23	2.44	1.43	13.49	0.65	5.57
235 AV Equip. Supplies	0.93	10.12	0.43	3.93	0.09	0.80	0.16	1.52	1.03	9.66	0.42	3.55
236 ETV Equip. & Supplies											0.51	4.32
240 Inst. Equip. & Supplies	3.77	41.07	2.46	22.67	1.74	14.59	1.15	11.08	2.39	22.55	2.61	22.35
242 General Equip & Supplies	1.93	21.06	2.43	22.45	1.86	15.61	1.14	11.00	3.99	37.58	2.36	20.24
250 Other	0.11	1.16	0.60	5.61	0.83	6.95	0.22	2.10	0.59	5.59	0.26	2.25
251 Computer Centre												
TOTAL (Instructional)	63.33	688.88	59.46	548.77	71.74	601.47	54.71	526.41	67.80	639.14	64.76	597.62
500 Pupil Transportation							8.00	76.94				
600 PLANT OPERATION												
610 Salaries	7.87	85.57	4.81	44.40	5.31	44.52	5.04	48.48	5.04	47.52	4.31	36.87

TABLE XXIV (Continued)

Expenditure Series	G		H		I		J		K		Population	
	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment
100 ADMINISTRATION	5.26	38.32	3.96	35.19	3.91	34.94	2.60	21.43	2.74	26.25	3.56	31.45
200 INSTRUCTION	64.46	469.74	65.49	581.40	64.32	573.61	64.30	530.60	60.64	582.00	59.72	
210 Salaries												
211 Teachers	51.65	376.35	57.37	509.49	57.04	508.70	54.47	449.49	50.97	489.18	52.19	460.39
212 Administrators	5.53	40.34	4.62	41.04	3.94	35.31	6.00	49.53	5.10	48.99	4.73	41.72
213 Other Inst. Staff												
a) Library	1.80	13.15	0.70	6.25	0.65	5.81	1.70	14.04	1.14	10.95	1.24	10.95
b) AV & TV	2.19	15.98					0.20	1.65	1.27	12.19	0.42	3.76
c) Guidance	2.73	19.92	2.80	24.28	2.67	23.79	1.92	15.88	2.15	20.68	1.98	17.54
d) Other												
1. Internal Sub	0.55	4.03									0.26	2.35
2. Sub Teacher			0.38	3.36	0.38	3.36	0.35	2.92				
215 Clerical & Bus Sup. Staff	2.30	16.72	1.74	15.52	1.93	17.29	2.80	23.14	1.87	17.95	2.13	18.87
216 AV & TV Technicians			0.33	2.96	0.38	3.37	1.20	9.93			0.45	4.12
230 Library Equipment & Sup.	1.19	8.67	0.86	7.60	0.56	5.00	1.07	8.88	0.89	8.54	0.88	7.77
235 AV Equip. Supplies	1.26	9.13	0.18	1.58	0.25	2.24	0.60	4.93	0.56	5.39	0.55	4.88
236 ETV Equip. & Supplies	0.25	1.83					0.37	3.06			0.13	1.17
240 Inst. Equip. & Supplies	3.62	26.33	1.53	13.54	1.62	14.50	2.73	22.49	3.37	32.40	2.51	22.15
242 General Equip & Supplies	1.90	13.81	2.54	22.52	2.39	21.27	3.07	25.37	1.82	17.49	2.32	20.94
250 Other	1.31	9.55	1.41	12.58	1.40	12.53	1.88	15.48	2.60	24.98	1.12	9.96
251 Computer Centre	1.60	11.61									0.17	1.56
TOTAL (Instructional)	77.87	567.42	74.46	661.28	72.15	653.19	78.39	646.81	71.76	688.77	71.21	628.13
500 PUPIL TRANSPORTATION											0.34*	3.05
600 PLANT OPERATION												
610 Salaries	6.21	45.26	3.54	31.48	3.54	31.58	8.14	67.17	6.17	59.22	5.33	47.04

TABLE XXIV (Continued)

Expenditure Series	A		B		C		D		E		F	
	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment
640 Utilities												
a) Fuel	1.29	14.01	1.05	9.75	2.75	23.08	2.07	19.91	1.53	14.45	0.67	5.78
b) Light & Power	6.09	66.26	4.10	37.87			2.59	24.89	6.86	64.57	2.59	22.17
c) Telephone & Post.	0.23	2.55	0.26	2.36	0.32	2.70	0.08	0.83	0.42	3.98	0.17	1.43
d) Water	0.20	2.16	0.14	1.30	0.09	0.75	0.25	2.39	0.34	3.24	0.15	1.31
650 Supplies												
a) Custodial	0.73	7.92	0.45	4.16	0.85	7.10	1.37	13.20	1.47	13.81	0.39	3.35
b) Other											0.03	0.22
651 Total Energy Supply & Cont.					2.25	18.94						
TOTAL (Plant Operation)	16.41	178.47	10.82	99.87	11.59	97.10	11.40	109.72	15.65	147.57	8.30	71.13
700 PLANT MAINTENANCE												
710 Salaries												
720 Repair & Replace	1.46	15.85	0.63	5.88	1.63	13.71	0.06	0.62			0.78	6.74
TOTAL (Plant Maintenance)	1.46	15.85	0.63	5.88	1.63	13.71	0.06	0.62			0.78	6.74
800 FIXED CHARGES	1.90	20.72	2.41	22.28	1.54	12.94	0.99	9.60	1.17	10.97	1.48	12.70
900 FOOD SERVICES												
910 Salaries	1.17	12.76	1.61	14.95	2.50	20.95	1.06	10.17	0.66	6.24		
911 Supply												
1000 STUDENT BODY									0.07	0.69		
1200 CAPITAL OUTLAY	0.41	4.50	5.36	49.55	1.95	16.33	0.00	0.00			0.03	1242.56
1300 DEBT SERVICE (Principal & Interest)	12.76	138.81	10.62	98.07	6.32	52.96	19.92	191.69	11.19	105.32	16.65	142.56
1400 TRANSFER											0.05	0.45
TOTAL	100.00	1087.74	100.00	922.81	100.00	838.40	100.00	962.17	100.00	942.70	100.00	856.05

TABLE XXIV (Continued)

Expenditure Series	G		H		I		J		K		Population	
	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment	Percent	Cost Per Student Enrolment
640 Utilities												
a) Fuel	0.57	4.15	0.94	8.31	0.92	8.17	1.64	13.54	1.08	10.37	1.14	10.12
b) Light & Power	1.86	13.43	2.70	24.02	2.91	25.93	1.93	15.89	3.89	37.34	3.20	28.28
c) Telephone & Post.	0.26	1.91	0.15	1.32	0.17	1.54	0.51	4.19	0.31	2.94	0.25	2.26
d) Water	0.21	1.50	0.24	2.15	0.25	2.22	0.40	3.31	0.28	2.69	0.23	2.12
650 Supplies												
a) Custodial	0.65	4.75	0.21	1.88	0.23	2.01	0.58	4.81	0.41	4.00	0.57	6.09
b) Other	0.69	5.01									0.07	0.70
651 Total Energy Supply & Cont.							1.43	11.77			0.23	2.08
TOTAL (Plant Operation)	10.43	75.99	7.80	69.24	8.01	71.45	14.62	120.67	12.41	116.56	11.07	97.64
700 PLANT MAINTENANCE												
710 Salaries			0.21	1.88	0.21	1.87					0.05	0.48
720 Repair & Replace	0.81	5.87	1.23	11.00	1.30	11.59	2.37	19.58	1.72	16.56	1.16	10.23
TOTAL (Plant Maintenance)	0.81	5.87	1.44	12.88	1.51	13.46	2.37	19.58	1.72	16.56	1.24	10.69
800 FIXED CHARGES	1.22	8.87	1.24	11.10	1.13	10.08	1.15	12.34	2.66	25.56	1.53	13.57
900 FOOD SERVICES												
910 Salaries	0.45	3.30	0.58	5.15	0.48	4.32	0.52	4.32	0.76	7.32	0.69	6.15
911 Supply												
1000 STUDENT BODY												
1200 CAPITAL OUTLAY					1.24	11.72			0.99	9.53	0.66	5.84
1300 DEBT SERVICE (Principal & Interest)	3.89	28.34	10.51	93.30	10.45	93.22	0.00	0.00	7.21	69.23	9.67	85.31
1400 TRANSFER	0.07	0.53									0.01	0.13
TOTAL	100.00	728.65	100.00	888.08	100.00	891.73	100.00	825.16	100.00	957.79	100.00	882.03

costs of full-time administrators and the prorated costs of vice-principals and department heads, varied over a large range. Comprehensive C with a proportion of total expenditure of 6.40 per cent, and a cost per student-enrolled of $53.63 had the highest administrative cost. The high cost was partially the result of the introduction of department heads in a comprehensive of 525 students. Comprehensive A had the lowest percentage of total expenditure for administration at 3.63 per cent and Comprehensive F had the lowest per student-enrolled administrative cost at $35.29. The average administrative proportion of total expenditure in the population was 4.73 per cent with an average cost of $41.72 per student-enrolled.

In "Other Instructional Staff", resident library services cost varied from $19.76 per student-enrolled in Comprehensive D to $5.81 in Comprehensive I. The proportion of total expenditure varied from 2.05 per cent in Comprehensive D to 0.87 per cent in Comprehensive F. The variation resulted primarily from librarian salaries and the enrollment in the comprehensive. Comprehensive G with two librarians and Comprehensive J with one and one-half librarians, were the only schools in the population with more than one librarian. The average proportion of total expenditure for library personnel was 1.24 per cent and the average per student-enrolled cost was $10.95.

Audio-visual and television personnel were employed in four of the eleven comprehensives. Only one full-time television teacher was employed, the remaining costs were proration of teacher-service personnel salaries.

Comprehensive F, which employed the full-time television-teacher had the highest percentage and per student-enrolled cost of 2.19 per cent and $15.98 respectively. Comprehensive J had the lowest percentage of 0.20 per cent and a per student-enrolled cost of $1.65. The average cost for the population was $3.76, and 0.42 per cent the average proportion of total expenditure.

Guidance personnel varied most widely in percentage of total expenditure and cost per student enrolled. This variation resulted from the allocation priorities of the population comprehensives. The following list indicates the Counselling personnel employed in the population:

Comprehensive A	1 and a partial counsellor
Comprehensive B	3 part-time counsellor-teachers
Comprehensive C	1 full-time counsellor
Comprehensive D	1 part-time counsellor-vice principal
Comprehensive E	1 full-time counsellor
Comprehensive F	1 and a partial counsellor
Comprehensive G	2 full-time and 4 part-time counsellor-teachers
Comprehensive H	3 full-time counsellors
Comprehensive I	3 full-time counsellors
Comprehensive J	2 full-time counsellors
Comprehensive K	2 full-time and one part-time teacher counsellor

The lowest percentage of total expenditure and per student costs were determined in Comprehensive D, with the highest percentage of 2.80 per cent and cost per student-enrolled of $24.28 in Comprehensive H. The average

proportion of total expenses in the population was 1.98 per cent with a per student-enrolled cost of $17.54 for guidance counselling services.

Comprehensive G was the only comprehensive with time designated for internal substitution. The resulting per student-enrolled cost of $4.03 and percentage of 0.55 per cent of total expenditure was an aggregated amount representing fifteen minutes per week for each teacher in the comprehensive. This amount represented the greatest expenditure for substitute teacher services in the population. Comprehensives C and K performed internal substitution by staff members at no cost, the time required being taken from teachers' general preparation time as required. The population average for substitute teachers was 0.26 per cent of total expenditures and $2.35 per student-enrolled.

Clerical and business support staff salaries represented a proportion of 2.13 per cent of total expenditure and an average per student-enrolled cost of $18.78. Comprehensive A had the highest proportion of total expense and per student cost in this category, while Comprehensive B had the lowest.

Audio-visual and television technicians were employed in four of the population comprehensives. Comprehensive F with 1.89 per cent of total expenditure and $16.21 per student-enrolled cost, had the highest expenditure, while Comprehensive H had the lowest at 0.38 per cent and $3.36. The average for the population was 0.45 per cent of total expenditure and $4.12 per student-enrolled in this category.

Instructional Media equipment and supplies, including library, audio-visual and educational television supplies, represented 1.78 per cent of the

population expenditure and a per student-enrolled cost of $13.82. Library equipment and supplies represented the next highest expenditure of 0.88 per cent, and $7.77 per student, followed by audio-visual at 0.55 per cent and $4.88 and educational television at 0.13 per cent and $1.17.

Instructional equipment and supplies varied from a high in Comprehensive A of 3.77 per cent of total expenditure and a per student-enrolled cost of $41.07 to a proportion of total expenditure of 1.15 per cent and a per student-enrolled cost of $11.08 in Comprehensive D. The average unit cost for the population was $22.15 which constituted 2.51 per cent of the total. As was previously noted (supra :85) the instructional equipment and supply costs were not accounted in detail in some of the population comprehensives, resulting in instructional costs being aggregated into general equipment and supply costs, particularly in the academic curricular programs of English, mathematics, modern languages, and social studies.

"General Equipment, Supply and Textbook" costs averaged 2.32 per cent of total expenditures and an average per student-enrolled cost of $20.94, while "Other" expenditures represented only 0.17 per cent of the total and a per student-enrolled expenditure of $1.56. Expenditures in these two categories varied within the population comprehensives, depending on the accounting system used, and the amount of instructional equipment and supply expenditures apportioned to "General Equipment, Supply and Textbooks."

Comprehensive G was the only comprehensive with an in-system computer centre services. The expenditure relative to Comprehensive G was a prorated

cost based on dollar volume of computer use by the comprehensive and by the other schools and central administration which shared the computer facilities. This service represented a cost of $11.61 per student-enrolled in Comprehensive G which was 1.60 per cent of the total expenditure of the comprehensive. In terms of population cost, the computer centre represented 0.17 per cent of total expenditure and $1.56 per student-enrolled. Comprehensives E, F, G, H, I, J, and K all used contracted computer services for timetabling. Within this group, various other contracted computer services were utilized including report cards, attendance services, and accounting procedures. The cost of these computer contracted services were included in the "General Equipment, Supply, Textbook" category.

"Pupil Transportation," representing 7.99 per cent of total expenditure and a per student-enrolled cost of $76.94, was an expenditure cost in Comprehensive D. Transportation costs to other comprehensives were not an expenditure as discussed previously (supra: 40).

"Plant Operation" costs averaged $97.64 per student-enrolled and 11.07 per cent of the total expenditure within the population. Wide variations of expenditures were noted throughout the comprehensives ranging from 16.41 per cent of total expenditure and $178.47 per student-enrolled in Comprehensive A to 7.80 per cent and $69.24 per student-enrolled in Comprehensive H. The three main categories within "Plant Operation" which resulted in the wide variation of cost were: 610 Salaries, 640a Fuel, and 640b Light and Power.

Comprehensives C and J operated total energy plants (supra:41) and had total energy supply and contract services expenditures in addition to the regular 650 Supply costs expended in other comprehensives. Comprehensive J had the cost of fuel broken down into the cost of heating and the cost of generating the electrical light and power used within the comprehensive. This breakdown was not maintained in the accounting system in Comprehensive C.

The average cost per student-enrolled of "Plant Maintenance" was $10.71 representing 1.21 per cent of total expenditures. Salary costs in this category were experienced only in Comprehensives H and I. The remainder of the population had the maintenance services performed by the plant caretaking personnel, or contracted the required services. The relatively short period of time that the comprehensives have been in operation tended to minimize expenditures in this category, but as the use of plant increases, a proportionate increase in maintenance costs should be experienced.

"Fixed Charges" averaged $13.57 per student-enrolled and 1.53 per cent of the total population. Variation within the population was the result of insurance costs and private employee benefit plans.

The cost of supplies for "Food Services" was not considered in this study, as food service supplies in general, were directly proportional to food services sales, and as a result did not represent an operational expenditure for the comprehensive. Salaries for this category represented an operational expenditure for the population comprehensives and were included. The salary expenditure

for food service personnel averaged 0.69 per cent of the total expenditure of the population and a $6.15 cost per student-enrolled. Within the population comprehensives, expenditures for this category were less than one per cent with the exception of comprehensives A, B, C, and D, with the highest cost of $20.95 per student-enrolled, representing 2.50 per cent of the total expenditure in Comprehensive D. Comprehensive F did not operate food services.

"Debt Service Principal and Interest" varied widely throughout the population from no expenditure being made by the administrative body of Comprehensive J, to an expenditure of $191.69 per student-enrolled and 19.92 per cent of total operating expenses in Comprehensive D. The average cost of debt service was $85.31 per student-enrolled and 9.67 per cent of total population expenditures.

"Capital Outlay" from current revenue averaged 0.66 per cent of the total expenditure, a per student-enrolled cost of $5.84. This category was not an expenditure charge in Comprehensives D, E, G, H, and J.

"Transfer" charges were made in four Comprehensives F, G, H, and I with only the transfer accounts being included in the study for comprehensives F and G as previously discussed (supra: 192).

The average "Total Expenditure" for the population was $882.03 per student-enrolled with the average cost per student varying from $1,087.74 in Comprehensive A to $728.65 in Comprehensive F. The factors resulting in this variation have been broken down in the expenditure series, and a detailed

analysis of the variation within comprehensives was not included in this study for reasons of space.

Total Costs in a Program Structure

Table XXV presents the twenty-three curricular program costs by functional category in a program budget format based on curricular organization. The raw totals give an estimated total cost for twenty- three curricular programs, guidance and driver education being partial non-credit programs in Comprehensive B.

"Direct Instructional Expenditure" included the instructional time and prorated general preparation time of teachers. This expenditure column represented the exact costs of direct instruction for each curricular area. "Indirect Instructional Expenditure" included the specific preparation time of the teaching staff and the supply costs in each curricular area. The remainder of teacher salary costs in the service function, auxiliary service function area and supervision was included in the "General Implementary" column, together with the remainder of the Instructional salaries, supplies and textbooks not included in indirect instructional expenditures.

The following cost columns: Central Administration, Plant Operation, Plant Maintenance, Fixed Charges, and Debt Services, included those costs defined in each category (c. f. supra: 35). The final column included the aggregated costs of 500 Transportation Series, 900 Food Services Series, 1000 Student Body, 1200 Capital Outlay Series, and 1400 Transfer Series.

TABLE XXV

A PROGRAM COST STRUCTURE OF TOTAL COSTS

	Direct Induction Expenditure	Indirect Induction Expenditure	General Implementary	Central Administration	Plant Operation	Plant Maintenance	Fixed Charges	Debt Services	Transfer Food Services Student Body Capital Outlay Transportation Costs	Total 1970-71
Christian Ethics	34,593.30	221.50	13,521.51	2,568.38	7,826.92	857.15	1,087.73	6,838.44	1,220.72	68,353.70
English	842,517.83	15,756.88	332,711.12	63,197.74	192,589.77	21,091.06	26,764.68	168,267.10	30,037.23	1,692,221.81
Fine Arts	183,545.60	31,647.70	72,524.47	13,775.86	41,980.77	4,597.43	5,834.17	36,678.91	6,547.52	397,084.02
Home Economics	172,506.86	20,950.59	68,017.30	12,919.74	39,371.80	4,311.72	5,471.60	34,399.43	6,140.62	363,676.18
Mathematics	709,906.16	15,601.73	280,468.92	53,274.45	16,234.38	17,779.35	22,568.10	141,845.85	25,320.79	1,428,828.63
Modern Languages	311,227.46	21,849.72	123,127.69	23,387.83	71,272.44	7,805.25	9,904.91	62,271.26	11,116.00	642,265.62
Physical Education	255,711.62	25,505.08	101,206.46	19,223.94	58,583.34	6,415.63	8,141.47	51,184.70	9,136.94	535,464.24
Science	761,810.32	55,600.05	300,956.05	57,165.94	174,208.35	19,078.06	24,210.17	152,207.12	27,170.38	1,572,057.55
Social Studies	624,998.08	29,898.93	246,870.01	46,892.41	142,900.66	15,649.46	19,859.26	124,853.36	22,287.48	1,273,821.65
Agriculture	38,091.62	9,420.95	15,365.35	2,918.61	8,894.23	974.03	1,236.05	7,770.96	1,387.19	86,843.90
Business Education	405,577.39	34,677.24	160,209.42	30,431.43	92,737.19	10,155.92	12,887.92	81,025.17	14,463.74	841,940.52
Commercial Cooking	25,893.71	8,046.53	10,243.57	1,945.74	5,929.49	649.36	824.04	5,180.64	924.79	59,661.83
Cosmetology	35,470.02	5,288.87	13,931.25	2,646.21	8,064.10	883.12	1,120.69	7,045.67	1,257.72	75,485.68
Drafting	93,047.43	9,138.17	36,876.85	7,004.68	21,346.16	2,337.68	2,966.53	18,650.29	3,328.89	194,953.25
Electrical	68,674.62	18,929.05	27,043.02	5,136.76	15,653.85	1,714.30	2,175.45	13,676.88	2,441.45	155,193.44
General	151,109.58	5,206.47	59,822.44	11,363.14	34,628.21	3,792.23	4,812.37	30,254.92	5,454.76	306,639.82
Mechanical	220,459.23	56,040.08	87,275.21	16,577.73	50,519.24	5,532.51	7,020.79	44,139.03	7,879.23	495,802.43
Media	32,948.72	1,217.44	13,111.77	2,490.55	7,589.74	831.17	1,054.77	6,631.22	1,183.74	67,285.02
Structural	63,281.94	12,164.16	24,994.31	4,786.53	14,467.95	1,584.43	2,027.13	12,744.37	2,260.20	139,137.80
Technology	65,550.38	6,312.00	26,018.67	4,942.19	15,060.90	1,649.36	2,093.05	13,158.82	2,348.97	137,414.86
Vocational	70,301.89	4,342.15	27,862.51	5,292.42	16,128.21	1,766.25	2,241.38	14,091.33	2,515.43	144,735.76
Driver Education	2,457.57	0.00	1,024.36	194.57	592.95	64.94	82.40	518.06	92.48	5,161.53
Guidance	2,966.52	0.00	1,229.23	233.49	711.54	77.92	98.88	621.68	110.97	6,193.84
	5,190,854.66	389,148.66	2,048,713.78	381,916.88	1,185,897.58	129,871.04	164,807.16	1,036,127.46	184,958.33	10,712,207.96



Table XXVI was derived directly from Table XXV, page 231. The aggregate cost by category was converted to student-enrolled cost and the percentage of total cost in Table XXIV. For example, the average per student-enrolled cost for mathematics was $117.65 which was 13.34 per cent of the total educational costs of the population. Of the twenty-three curricular programs costed, English received the highest allocation while the lowest was allocated to commercial cooking, as previously noted.

Table XXVI also reflected the relative emphasis placed on each curricular program in terms of fiscal allocation. The greatest emphasis was placed on the English, mathematics, science, and social studies programs. All vocational-technical classes received less emphasis than academic classes, with the exception of Christian Ethics.

Table XXVI provided, in addition, a breakdown of expenditures by function. The percentage of total expenditure for direct instruction was 48.46 per cent, an amount of $427.41 per student enrolled. Indirect instructional expenditure represented 3.63 per cent of total expenditure, and a cost of $32.04 per student enrolled. Within the final category, five functions accounted for 1.73 per cent of total expenditure. The expenditure series included in this category represented the following percentages of total educational expenditures: transportation, 0.35 per cent; food services, 0.70 per cent; student body, 0.006 per cent; capital outlay, 0.66 per cent; and transfer, 0.02 per cent.

Tables XXV and XXVI exemplify the "crosswalk" described by Dei Rossi (1969:47) which served as a transitional stage between a conventional

TABLE XXVI

ESTIMATED PER STUDENT ENROLLED COSTS IN A PROGRAM COST STRUCTURE

	Direct Instructional Expenditures		Indirect Instructional Expenditures		General Implementary Expenditures		General Administration Expenditures		Plant Operation Expenditures		Plant Maintenance Expenditures	
	Per Student	Per Cent	Per Student	Per Cent	Per Student	Per Cent	Per Student	Per Cent	Per Student	Per Cent	Per Student	Per Cent
Christian Ethics	$ 2.84	0.32	$ 0.02	0.002	$ 1.11	0.12	$ 0.21	0.02	$ 0.64	0.07	$ 0.07	0.01
English	69.37	7.87	1.30	1.47	27.39	3.10	5.20	0.59	15.85	1.80	1.74	0.20
Fine Arts	15.11	4.71	2.60	2.95	5.97	0.67	1.13	0.13	3.46	0.39	0.39	0.04
Home Economics	14.20	1.61	1.72	1.96	5.59	0.63	1.06	0.12	3.24	0.37	0.35	0.04
Mathematics	58.45	6.63	1.28	1.46	23.09	2.62	4.38	0.50	12.38	1.52	1.46	0.16
Modern Languages	25.63	2.90	1.79	2.03	10.31	1.15	1.93	0.22	5.87	0.66	0.64	0.07
Physical Education	21.06	2.39	2.10	2.38	8.33	0.94	1.58	0.18	4.82	0.54	0.53	0.06
Science	62.73	7.11	4.58	5.19	24.77	2.81	4.71	0.53	14.34	1.62	1.57	0.17
Social Studies	51.46	5.83	2.46	2.79	20.33	2.30	3.86	0.44	11.76	1.33	1.29	0.15
Agriculture	3.14	0.36	0.77	0.09	1.26	0.14	0.24	0.03	0.73	0.08	0.08	0.01
Business Education	33.39	3.75	2.86	3.24	13.19	1.50	2.50	0.28	7.63	0.87	0.84	0.09
Commercial Cooking	2.13	0.24	0.66	0.08	0.84	0.10	0.16	0.02	0.48	0.06	0.05	0.01
Cosmetology	2.92	0.33	0.43	0.05	1.14	0.13	0.22	0.02	0.66	0.08	0.07	0.01
Drafting	7.66	0.86	0.75	0.08	3.04	0.34	0.58	0.06	1.76	0.19	0.19	0.02
Electrical	5.65	0.64	1.55	0.18	2.22	0.25	0.42	0.05	1.29	0.14	0.14	0.02
General	12.44	1.41	0.43	0.04	4.93	0.56	0.94	0.11	2.85	0.38	0.31	0.03
Mechanical	18.15	2.06	4.61	0.52	7.19	0.81	1.36	0.15	4.16	0.47	0.45	0.05
Media	2.71	0.31	0.10	0.01	1.08	0.12	0.21	0.02	0.62	0.07	0.07	0.01
Structural	5.21	0.59	1.00	0.11	2.06	0.23	0.39	0.04	1.19	0.13	0.13	0.01
Technology	5.40	0.61	0.52	0.06	2.14	0.24	0.41	0.05	1.24	0.14	0.14	0.02
Vocational	5.79	0.66	0.37	0.04	2.29	0.26	0.44	0.05	1.33	0.15	0.14	0.02
Driver Education	0.20	0.02	0.00	0.00	0.08	0.01	0.02	0.002	0.05	0.01	0.01	0.001
Guidance	0.24	0.03	0.00	0.00	0.10	0.01	0.02	0.002	0.06	0.01	0.01	0.001
Totals	427.41	48.46	32.04	3.63	168.69	19.13	31.45	3.56	97.64	11.07	10.69	1.21
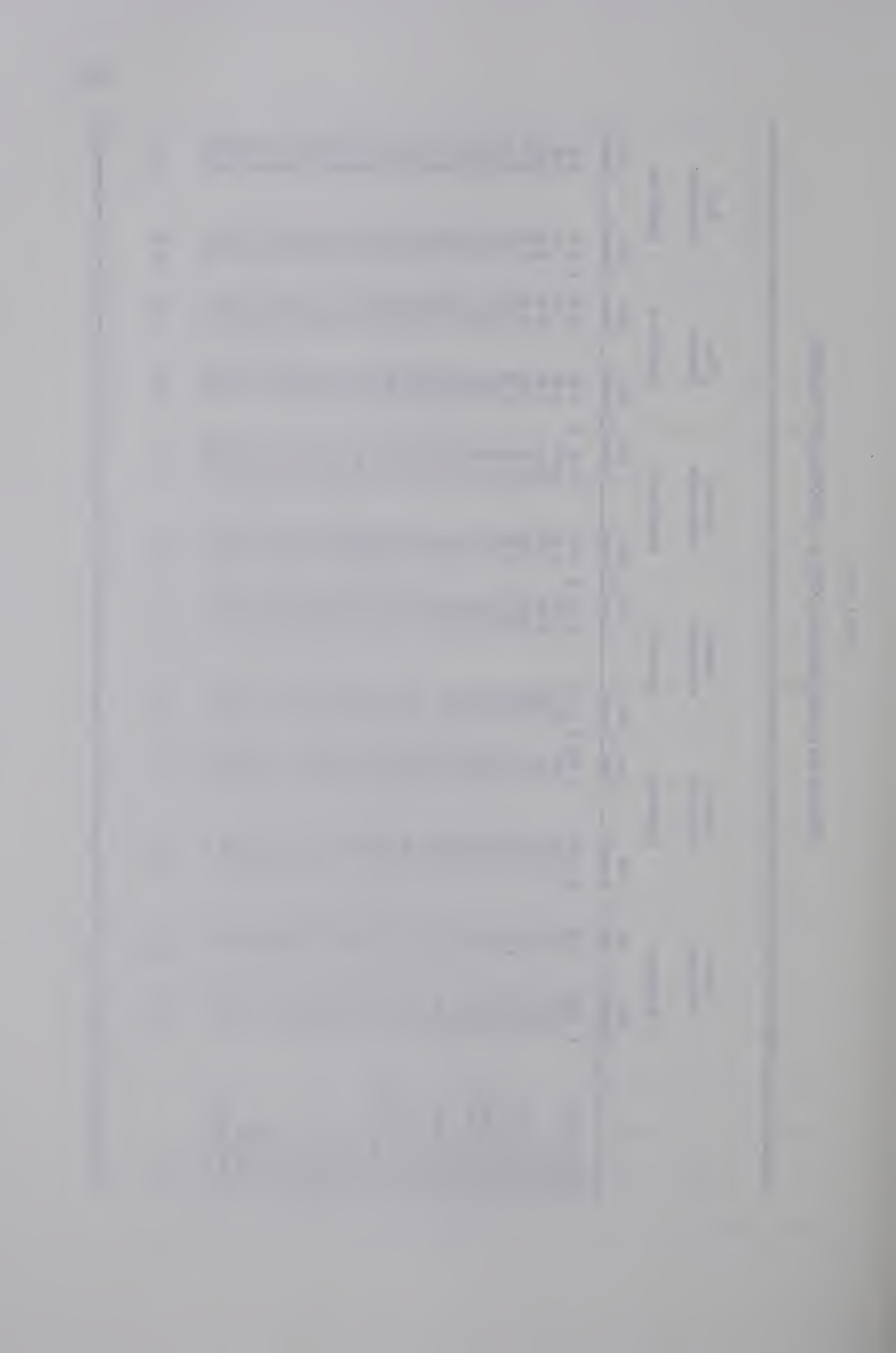


TABLE XXVI (Continued)

	Fixed Charges Expenditures		Desk Service Expenditures		Transportation Food Services Student Body Capital Outlay Transfer Expenditures		Total 1970 - 1971 Expenditures	
	Per Student	Per Cent	Per Student	Per Cent	Per Student	Per Cent	Per Student	Per Cent
Christian Ethics	$ 0.09	0.01	$ 0.56	0.06	$ 0.10	0.01	$ 5.63	0.64
English	2.20	0.25	13.85	1.57	2.47	0.28	139.33	15.80
Fine Arts	0.48	0.05	3.02	0.34	0.54	0.06	32.70	3.71
Home Economics	0.45	0.05	2.83	0.32	0.51	0.06	29.94	3.39
Mathematics	1.86	0.21	11.68	1.32	2.08	0.23	117.65	13.34
Modern Languages	0.82	0.09	5.13	0.58	0.91	0.10	52.88	5.60
Physical Education	0.67	0.08	4.21	0.48	0.75	0.08	44.09	5.00
Science	1.99	0.22	12.53	1.42	2.23	0.25	129.44	14.67
Social Studies	1.63	0.19	10.28	1.17	1.84	0.20	104.88	11.89
Agriculture	0.10	0.01	0.64	0.07	0.11	0.01	7.15	0.81
Business Education	1.06	0.12	6.67	0.76	1.19	0.14	69.32	7.86
Commercial Cooking	0.07	0.01	0.43	0.05	0.08	0.01	4.91	0.56
Cosmetology	0.09	0.01	0.57	0.07	0.10	0.01	6.21	0.70
Drafting	0.24	0.02	1.53	0.17	0.27	0.03	16.05	1.82
Electrical	0.18	0.02	1.13	0.13	0.20	0.02	12.78	1.45
General	0.40	0.04	2.49	0.28	0.45	0.05	25.24	2.86
Mechanical	0.58	0.07	3.63	0.41	0.65	0.07	40.82	4.62
Media	0.09	0.01	0.55	0.06	0.10	0.01	5.54	0.63
Structural	0.17	0.02	1.04	0.12	0.19	0.02	11.46	1.30
Technology	0.17	0.02	1.08	0.12	0.19	0.02	11.31	1.28
Vocational	0.18	0.02	1.16	0.13	0.21	0.02	11.92	1.35
Driver Education	0.01	0.01	0.04	0.01	0.01	0.01	0.42	0.05
Guidance	0.01	0.01	0.05	0.01	0.01	0.01	0.51	0.06
Totals	13.57	1.54	85.31	9.67	15.23	1.73	882.03	100.00



budget format and a program budget format.

VI. ANCILLARY AND CAPITAL "USE" COSTS AS A FUNCTION OF COMPLETE EDUCATIONAL COSTS

The Total Educational Costs reported are based on the total operational expenditures made by the administrative school boards of the eleven comprehensive high schools in the population of this study. Complete Educational Costs included Total Educational Cost plus the addition of ancillary expenditures and capital use expenditures. These two additional costs were not expenditures made by the comprehensive school boards, but represented the costs of educating students enrolled in the comprehensive. The former expenditure was made by school boards other than the comprehensive boards, while the latter was a prorated cost for the use of the comprehensive building, site and equipment for the school year 1970-1971.

This section deals with specific sub-problems 19, 20, and 21 on page 4 of this study.

Ancillary Costs as a Function of Complete Educational Costs

Ancillary costs are defined, in this study, as transportation costs paid by school boards, other than the comprehensive school boards, for the transportation of students enrolled in the population comprehensive schools. Ancillary expenditures were made on behalf of students enrolled in Comprehensives A, B, C, E, J, and K by eight school unit boards in Saskatchewan and one county in

Alberta. Table XXVII presents the aggregate amounts paid for the transportation of students enrolled in these comprehensives, as well as the a per student-enrolled cost represented by this amount.

Per student-enrolled costs varied from $15.71 in Comprehensive A to $100.34 in Comprehensive C. The high cost of Comprehensive C resulted from the transportation of students for half-day vocational-technical and home economics curricular programs as well as for full day students.

Transportation costs in Comprehensive D were charged within the operational expenditures of the comprehensive. Students attending Comprehensives F, G, H, and I were responsible for their own transportation costs.

Capital "Use" Costs as a Function of Complete Educational Costs

"Capital 'Use' Costs" were the prorated costs of the comprehensive building, site, and equipment expended during the 1970-1971 school year. The life expectancy for school buildings, constructed in the manner of the comprehensives, was determined to be fifty years (c.f. supra: 82), while the average life expectancy of the capital equipment within the comprehensives was determined to be ten years (c.f. supra: 83).

Table XXVIII presents the capital building and site costs of each of the population comprehensives as well as the prorated capital "use" costs based on the average life expectancy. The total capital "use" cost for the school year for buildings and site was the difference between the prorated yearly "use" cost and the debt service capital payment made in the total

TABLE XXVII

ANCILLARY EXPENDITURE BY AGGREGATED AMOUNT AND PER STUDENT-ENROLLED COST

Comprehensives	Aggregated Ancillary Cost	Cost Per Student Enrolled
A	12,363.30	15.71
B	28,947.12	47.15
C	53,204.02	100.34
E	48,933.00	56.37
J	33,330.47	25.78
K	70,021.16	61.91
TOTAL	218,974.35	
Cost Per Student Enrolled in Population		18.03

TABLE XXVIII

PRORATED CAPITAL BUILDING AND SITE COSTS BY AGGREGATED AMOUNT AND PER STUDENT-ENROLLED IN POPULATION COMPREHENSIVES

Comprehensives	Building Value	Site Value	Total	Yearly Use Cost	Debt Service Capital Payment	Net Use Cost	Cost Per Student Enrolled
A	3,889,710.30	14,029.45	3,903,739.75	78,074.80	32,000.00	46,074.80	58.54
B	2,358,930.00	25,000.00	2,383,930.00	47,678.60	29,040.75	18,637.85	30.35
C	2,241,165.41	40,000.00	2,281,165.41	45,623.31	9,500.00	36,123.31	68.81
D	2,500,000.00	0.00	2,500,000.00	50,000.00	37,109.00	12,891.00	26.76
E	5,493,648.28	36,905.85	5,530,554.13	110,611.08	15,000.00	95,611.10	100.15
F	4,253,383.00	66,654.00	4,320,037.00	86,400.74	110,598.38	0.00[a]	0.00[a]
G	2,630,950.80	120,000.00	2,750,950.80	55,019.02	14,226.34	40,792.68	25.00
H	4,094,478.84	10,458.40	4,104,937.24	82,098.74	55,572.32	26,526.42	17.12
I	3,838,787.77	12,051.90	3,850,839.67	77,016.79	59,464.33	22,552.46	13.82
J	5,112,617.00	178,103.62	5,290,720.62	105,814.41	0.00	105,814.41	81.21
K	3,500,000.00	0.00	3,500,000.00	70,000.00	27,477.44	42,522.26	37.60
TOTALS	39,913,671.40	503,203.22	40,416,875.62	808,377.49	384,988.56	447,546.29	36.85

[a] Debt service capital payment exceeds yearly use cost.

educational expenses of the comprehensives.

The capital building and site "use" cost per student-enrolled varied from $110.15 in Comprehensive E to nil in Comprehensive F where the debt service capital payment exceeded the capital building and site "use" cost.

Table XXIX shows the value of the capital equipment in each of the comprehensives, the yearly "use" cost and the per student-enrolled capital equipment "use" cost. These costs varied from $104.95 in Comprehensive A to $39.10 in Comprehensive F with an average per student-enrolled cost of $63.83.

These costs have a direct implication for the amount to be designed for equipment reserve budgeting for the replacement of capital equipment. It was noted that the practice of capital equipment reserve budgeting was not general throughout the population of this study.

Complete Educational Costs

Table XXX presents the Complete Educational Costs per student-enrolled in each comprehensive and the average per student-enrolled costs in the population. Complete Educational Costs were the sum of the Total Educational Costs, ancillary costs, capital building and site "use" costs and capital equipment "use" costs. The Complete Educational Cost per student-enrolled varied from a high of $1,266.94 in Comprehensive A to $802.07 in Comprehensive G with an average cost of $1,001.73 for the population.

Comprehensives F, G, H and I had Complete Educational Costs of

TABLE XXIX

PRORATED CAPITAL EQUIPMENT USE COSTS BY AMOUNT AND PER STUDENT - ENROLLED IN POPULATION COMPREHENSIVES

Comprehensive	Equipment Value	Yearly Use Cost	Cost Per Student Enrolled
A	825,971.98	82,597.20	104.95
B	526,441.61	52,644.16	85.74
C	505,509.98	50,551.00	96.29
D	269,792.78	26,979.28	55.97
E	695,105.71	69,510.57	80.08
F	654,881.17	65,488.12	39.10
G	790,362.03	79,036.20	48.42
H	782,522.66	78,252.27	49.56
I	859,032.16	85,903.22	55.46
J	1,102,792.92	110,279.29	84.63
K	740,120.39	74,012.04	65.44
TOTALS	7,752,533.39	775,253.35	63.83

TABLE XXX

COMPLETE EDUCATIONAL COST PER STUDENT-ENROLLMENT FOR POPULATION

Per Student Enrolled Costs	COMPREHENSIVES											
	A	B	C	D	E	F	G	H	I	J	K	Aggregate
Total Educational Cost	1,087.74	922.81	838.40	962.17	942.70	856.05	728.65	888.08	891.73	825.16	959.79	882.03
Ancelliary Cost	15.71	47.15	100.34	0.00	56.37	0.00	0.00	0.00	0.00	25.78	61.91	18.03
Capital Building & Site Cost	58.54	30.35	68.81	26.76	110.15	0.00	25.00	17.12	13.82	81.21	37.60	37.84
Capital Equipment Cost	104.95	85.74	96.29	55.97	80.08	39.10	48.42	49.56	55.46	84.63	65.44	63.83
Complete Educational Expenditures	1,266.94	1,086.05	1,103.84	1,044.88	1,089.30	895.15	802.07	954.62	961.01	1,016.78	1,124.74	1,001.73

under $1,000.00 per student. These schools had the four highest enrollments in the population. There was a trend towards economies of scale on the Complete Educational Cost dimension which was not evident in the Total Educational Cost dimension.

VII. SUMMARY OF CHAPTER V

Per student-course and per student-enrolled costs were reported by subject and curricular program. The per student-course unit costs showed that the highest cost programs were: agriculture, technology, structural and electrical. The middle-cost range programs were commercial cooking, cosmetology, drafting, general, Vocational A, home economics and mathematics. The least-cost programs were Christian Ethics, English, modern languages, physical education, science, social studies and business education.

The average per student-enrolled Total Educational Cost was $882.03 with a variation existing from $1,087.74 in Comprehensive A to $728.65 in Comprehensive G.

Programs receiving the highest financial emphasis were: English, mathematics, science, social studies and business education. The programs receiving least emphasis were commercial cooking, media, structural, electrical, drafting, cosmetology and agriculture.

The non-curricular programs of general service function, auxiliary service function and supervisory function activities resulted in an aggregate

per student-enrolled cost of $116.14.

The average percentage of total expenditure for direct instruction was 48.46 per cent. The corresponding percentage for indirect instruction and implementary services was 3.63 per cent and 47.91 per cent respectively.

The average complementary per student-enrolled costs of ancillary, capital building and site, and capital equipment were $18.03, $37.84, and $63.83 respectively. The average Complete Educational Cost per student-enrolled cost for the population was $1,001.73.

CHAPTER VI

FINDINGS, CONCLUSIONS, IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

This chapter contains four sections. The first section summarizes the findings reported in Chapter V. The summary of findings follows the structure of the main problem, and sub-problems related to this study.

The second section deals with conclusions and implications which arose as a result of the findings. These conclusions pertain to the cost analysis process employed in the study and the results of the analysis in regard to the population comprehensive.

Suggestions for further research and refinements of the cost analysis process are presented in the third section.

The fourth section outlines specific recommendations relative to the comprehensive high schools which result from the completion of the cost analysis.

I. SUMMARY OF STUDY FINDINGS

The summary of findings follows the sequence of problems outlined in Chapter I. The problems considered in sequence were: the major problem, three general sub-problems, and twenty-one specific sub-problems stated in the form of questions.

The Problem

The major purpose of this study was to conduct a cost analysis in eleven comprehensive high schools in the Province of Saskatchewan, and to provide cost data in a form that would be of immediate utility to the decision-makers involved. Per student costs were developed on a number of bases. These were by: (1) subject; (2) five grades; (3) two grade divisions; (4) twenty-three curricular programs; (5) five non-curricular programs; (6) eighteen auxiliary service function activities; and (7) three supervisory activities.

General Sub-Problems

Three general sub-problems pertained to the development of a basis for the study, the incorporation of capital cost into cost analysis, and the development of a computer based electronic data processing system, were considered as pre-study problems.

General Sub-Problem I. On the basis of the list of subjects taught in each comprehensive, submitted by the school principals, 825 different subjects in twenty-three curricular areas were found to be taught in the population comprehensives. An analysis to determine similarities between courses offered in the individual comprehensives resulted in the original subject total being reduced from 825 courses to 567 courses.

General Sub-Problem 2. Capital costs in terms of building, site and equipment were included in this cost analysis as complementary costs. The determination of capital "use" costs was based on a ratio of one year, the 1970-1971 school year, to the life expectancy in years of the building, site and equipment.

This method of prorating capital "use" costs provided a gross measure of costs. Exact measures of capital "use" costs, based on depreciating values of various segments of the school building, the actual life expectancy of each article of capital equipment, and a viable measure of obsolescence, was beyond the scope of this study. It was recognized that this type of analysis was required if exact measures of capital "use" costs were to be obtained.

General Sub-Problem 3. The development of an electronic data processing system was achieved by producing nineteen computer programs to provide a viable method of relating the courses taught within the schools to the prorated costs of teacher salaries. Specifically, computer programs were developed to produce the following unit costs, (1) direct instructional costs for each student in each course, (2) indirect instructional costs in each curricular program, (3) general service function costs in five non-curricular programs, (4) auxiliary service function costs for eighteen non-curricular activities, and (5) supervision function costs for three supervision activities.

These five basic computer programs provided an electronic data processing system to translate the time and auxiliary data from a faculty work-

load survey directly into unit costs. The remainder of the programs developed produced aggregated data and unit cost data in a function-object and program budget format. These programs were of a specific nature designed to adapt the accounting systems of the individual comprehensive schools to the accounting systems utilized in this study. As such, the programs were not universally applicable to all school systems. However, with minor adjustments to allow for the different accounting processes of individual school systems, the programs are functionally operable.

Specific Sub-Problems

There were twenty-one sub-problems considered in this study. The findings relative to each are summarized individually.

Sub-Problem 1. What subjects were offered within each of the population comprehensive high schools?

The total number of subjects offered within each of the comprehensive high schools is summarized below.

Comprehensive A, 80 subjects in 17 curricular programs.

Comprehensive B, 115 subjects in 16 curricular programs.

Comprehensive C, 82 subjects in 15 curricular programs.

Comprehensive D, 59 subjects in 12 curricular programs.

Comprehensive E, 80 subjects in 16 curricular programs.

Comprehensive F, 111 subjects in 10 curricular programs.

Comprehensive G, 159 subjects in 16 curricular programs.

Comprehensive H, 112 subjects in 15 curricular programs.

Comprehensive I, 116 subjects in 15 curricular programs.

Comprehensive J, 133 subjects in 18 curricular programs.

Comprehensive K, 153 subjects in 17 curricular programs.

The total number of subjects taught within the population comprehensives was 567 as was reported in sub-problem 2.

Sub-Problem 2. What were the average qualifications, length of teaching experience, salary and age of teachers?

The average qualifications of teachers in years of training was 4.40 years ranging from a population high of 4.73 years in Comprehensive I to 3.95 years in Comprehensive A. The average experience for salary purposes of teachers was 6.76 years ranging from a high in Comprehensive K of 7.97 years to a low of 5.62 in Comprehensive G.

The highest average salary for teachers was $11,120.57 in Comprehensive K. The lowest average salary was $8,715.32 in Comprehensive C. The average salary of teachers in the population was $10,217.36.

The average age of teachers in the population was 36.10 years. The Comprehensive with the highest average age was Comprehensive E at 39.63 years, while Comprehensive B had the lowest average teacher age of 32.15

years.

Sub-Problem 3. What were the average qualifications, length of experience, salary and age of teachers in each curricular program?

Teachers of all academic subjects had an average training of more than four years, with the teachers of Christian Ethics, mathematics, science and social studies, having an average training of more than 4.50 years. Teachers of business education and technical education had an average of less than 4.00 years. The average experience for salary purposes presented no pattern for academic or vocational teachers, but ranged from a low of 2.25 years for Christian Ethics teachers to 8.02 years for mathematics teachers.

The average salaries for teachers in the curricular programs were summarized into four distinct levels: (1) under $9,000.00, Christian Ethics and physical education, (2) under $10,000.00, home economics, business education and vocational-technical, (3) under $11,000.00, English, fine arts, modern languages, and science, (4) under $12,000.00, mathematics, and social studies. The average age of teachers was summarized into three age levels: (1) under 30.00 years of age, Christian Ethics and physical education, (2) under 35.00 years of age, home economics and science, (3) under 40.00 years of age, English, fine arts, mathematics, modern languages, social studies, business education and vocational-technical.

Sub-Problem 4. What were the direct instructional costs per student-course enrollment?

The direct instructional costs per student-course enrollment were determined for each subject in each comprehensive. Direct instructional costs were affected by three factors: (1) teachers' salaries, (2) the per cent of general preparation time allotted to teachers, and (3) the course enrollment. In general, the higher the teacher's salary, the higher the general preparation time allotment, and the lower the student enrollment, the higher were the per student-enrolled subject costs.

The direct instructional costs tended to be higher in the technical-vocational subjects, with the exception of business education, than in the academic subjects. The cost variation within subjects fluctuated in direct relation to the three factors listed above.

Sub-Problem 5. What were the direct instructional costs per student-course enrollment by curricular programs?

Three distinct levels of direct instructional cost per student-course enrollment were identified within the population comprehensives in both Division III and IV. In Division III, the lowest cost programs were Christian Ethics, fine arts, mathematics, modern languages, science, social studies, drafting, and business education. The mid-range cost programs were English, and physical education. Home economics, commercial cooking and industrial

arts were the high-range cost subjects.

Within Division IV, three levels of subject cost were also identified. High cost level subjects were structural, technology, agriculture, electrical, mechanical, commercial cooking and home economics. Middle cost range subjects were drafting, cosmetology, fine arts, English and business education. Low range cost level courses were Christian Ethics, modern languages, mathematics, physical education, science and social studies.

In general, the courses with the highest student enrollment were the lowest cost courses, and courses in low demand by students were the highest cost courses.

Sub-Problem 6. What were the average direct instructional costs per student-course equivalent?

Per student-course equivalent direct instructional costs were based on a standard instructional unit of one credit in all subjects other than English, a two-credit course. Consequently, the range of unit costs was narrower than the unit costs for student-course enrollment.

The cost patterns established for student-course equivalent unit costs in Division IV was essentially the same as those described for sub-problem 5, although the range of curricular program costs was considerably narrowed. The Division III subjects unit costs per student-course equivalent remained exactly the same as for per student-course enrollment, as all classes being

one-credit courses.

Sub-Problem 7. What were the direct instructional per student-enrolled cost per grade?

Direct instructional per student-enrolled unit costs per grade varied between the Divisions and grades without the establishment of an increasing or decreasing trend. The highest direct instructional costs were experienced in grade IX ($451.52) followed in order by grade X ($423.66), grade VIII ($421.65), grade XII ($418.93) and grade XI ($417.67) in the population. The average direct instructional unit costs per student-enrolled by grade was $449.34 in Division III and $420.17 in Division IV, resulting in a comprehensive average of $421.88 for all grades taught.

The grade costs obtained were contrary to the cost trend found in, (1) per student-enrolled direct instructional unit costs by subject and curricular program, and (2) the unit cost per student-equivalent by curricular program. The unreliability of the grade unit costs were a result of three factors: (1) the lack of a standard unit for a grade enrolled pupil, (2) the practice of students taking courses at grade levels other than the grade in which they were enrolled, and (3) the practice of administrators designating students enrolled in the highest grade in which they took subjects.

The value of the direct instructional unit cost per student-enrolled by grade was to identify the distortion that occured when unit cost

expenditures were not based on a standardized unit, i.e., student-equivalent enrollments.

Sub-Problem 8. What were the resident, indirect instructional costs per student-course, and per student-enrolled, by curricular program?

Resident indirect instructional costs were reported on the basis of the number of students enrolled in the particular curricular program, and the number of students enrolled in the comprehensive. This approach helped to establish a perspective relative to indirect instructional costs. Curricular programs with high indirect instructional costs but low enrollment; e.g. electricity, represented only a small proportion of the indirect instructional costs for the total enrollment of the comprehensive.

Resident indirect cost based on a per student-course basis were highest in the vocational-technical courses with the exception of business education and cosmetology. Agriculture, with a population resident indirect instructional cost of $33.39 per student-course enrollment, represented the highest curricular program cost. Of the academic curricular programs, fine arts, at $7.82 per student, had the highest indirect instructional cost.

The resident indirect instructional costs varied among the comprehensives, the greatest source of variance being the amount of specific preparation time allocated to teachers. Instructional equipment and supply cost accounting procedures varied widely throughout the comprehensives, making the isolation of costs for specific curricular programs dependent on the use

of proration procedures in three of the comprehensives.

Sub-Problem 9. What were the resident implementary per student-enrolled costs?

The average resident implementary cost per enrolled student was $282.90. Comprehensive A had the highest unit cost at $390.29 and Comprehensive F had the lowest student-enrolled cost of $215.61.

The implementary costs were subdivided into general implementary, and plant implementary categories. The general implementary unit cost, per student-enrolled, ranged from a high of $209.75 in Comprehensive J to a low of $137.23 in Comprehensive F, resulting in an average general resident implementary cost of $174.72 for the population.

Plant implementary costs per student enrolled averaged $108.34 in the population. The highest cost encountered was in Comprehensive A at $194.33, and the least cost of $77.88 per student-enrolled was in Comprehensive F.

Sub-Problem 10. What were the resident per student-enrolled costs of general service function programs, namely, general administration, library, audio-visual, television and guidance counselling?

The cost of guidance counselling per student-enrolled varied from $6.95 in Comprehensive D to $25.18 in Comprehensive H, with an average unit cost of $18.13 for the population. The library service function cost averaged

$18.72 per student-enrolled in the population. The range of library costs varied from $28.31 in Comprehensive A to $10.82 in Comprehensive I.

Audio-visual service costs varied from $16.04 per student-enrolled in Comprehensive E to $0.80 in Comprehensive C. No prorated teacher salary costs were employed in Comprehensives A, B, C, D, and G, where the audio-visual function was performed by teachers generally. Television costs varied from $22.56 per student-enrolled in Comprehensive F to $1.02 in Comprehensive K, resulting in an average cost of $13.95 per student-enrolled in the comprehensives providing television services.

Administrative costs varied from $35.29 in Comprehensive F to $53.63 in Comprehensive C with an average per student-enrolled cost of $41.72 for the population.

The total service function cost per student-enrolled varied from $109.53 in Comprehensive G to $65.59 in Comprehensive D. The average service function cost was $92.28 in the population.

Sub-Problem II. What were the per student-enrolled costs of auxiliary service function activities?

Auxiliary function activities varied from $31.60 per student enrolled in Comprehensive E to $1.78 in Comprehensive A with an average cost per student-enrolled in the population of $8.73. The high cost in Comprehensive E was the result of activities related to the operation and organization of the comprehensive during its first year of operation.

Sub-Problem 12, What were the per student-enrolled costs of supervision?

Per student-enrolled supervision costs varied from $40.24 in Comprehensive D to no cost in Comprehensives B and G in which no supervisory activities were conducted.

The variation of costs was the direct result of the priorities set within the comprehensives for student supervision. Schools with low supervisional costs permitted more student freedom in determining their own non-scheduled activities.

Sub-Problem 13. What were the resident, combined, indirect and implementary costs per student-enrolled?

Resident, combined, and indirect implementary costs per student were subdivided into salary costs and expense costs. The highest salary unit cost per student-enrolled was $236.45 in Comprehensive A, while Comprehensive F, with $140.06, had the lowest unit cost. The average unit cost for salaries in the combined, resident, indirect and implementary costs was $185.70.

The expense dimension unit cost averaged $129.24 in the population, with the highest unit cost recorded in Comprehensive A at $196.27 and the least cost of $90.00 in Comprehensive D.

The total resident indirect and implementary expenditures averaged $314.94 per student-enrolled. The range of unit costs was from a high of

$432.72 in Comprehensive A to $239.36 in Comprehensive F. The four comprehensives with the highest enrollments, Comprehensives F, G, H, and I, and Comprehensive D, with the lowest enrollment had combined, resident, indirect and implementary expenditures of less than $300.00 per student enrolled.

Sub-Problem 14. What were the non-resident implementary costs per student-enrolled?

The total non-resident implementary unit costs per student-enrolled varied from $33.77 in Comprehensive J to $315.23 in Comprehensive D, resulting in an overall average cost per student in the population of $139.40.

Sub-Problem 15. What were the total educational per student-course costs and per student-enrolled costs of curricular programs?

The total educational unit costs by curricular program were an aggregation of direct, resident indirect, resident implementary, and non-resident implementary expenditures. The overall cost pattern identified in per student-course unit costs was comparable to the pattern established in direct instructional costs. The high cost range included the subjects: agriculture, technology, structural and electrical. The middle range programs were commercial cooking, cosmetology, drafting, general and Vocational A in the vocational-technical subjects and home economics and mathematics in the academic subjects. The least cost programs were Christian Ethics, English, modern languages, physical education,

science, and social studies in the academic area and business education in the technical-vocational programs.

The cost pattern based on per student enrollment was generally reversed relative to the per student-program enrollment cost. The lowest cost group included commercial cooking, media, structural, electrical, drafting, cosmetology and agriculture. The highest cost group contained English, mathematics, science, social studies and business education. In general, the curricular programs with the lowest enrollment produced the lowest per student-enrolled costs.

Sub-Problem 16. What were the total per student-enrolled costs by grade and grade division?

The average per student-enrolled cost in Grade VIII was $847.15 in Comprehensive F, the only comprehensive offering a Division III, Year II program. Grade IX total educational costs per student-enrolled ranged from $704.92 in Comprehensive G to $958.32 in Comprehensive I with an average total educational cost of $841.48. The average per student enrolled total educational cost for Division III was $842.37.

Division IV, Grade X, Total Educational Cost per student enrolled varied from $1,073.10 in Comprehensive A to $741.34 in Comprehensive G with an average grade X total educational cost of $890.23 for the population. Grade XI costs ranged from $1,125.83 per student-enrolled in Comprehensive A to $721.75 in Comprehensive G with an average per student-enrolled cost

of $886.09 for all grade XI students in the population. Grade XII total educational costs per student-enrolled varied from $1,124.05 in Comprehensive A to $738.68 in Comprehensive G with a population average of $878.87. The Total Educational Cost per student-enrolled in Division IV ranged from $1,087.74 in Comprehensive A to $738.68 in Comprehensive G with an average per student-enrolled cost of $883.98.

The total educational cost per student-enrolled in Divisions III and IV in the population was $882.03.

As in sub-problem seven the derived total per student costs were of little value because of the failure to account for three factors: (1) the lack of a standard unit for a grade-enrolled student, (2) the practice of students taking courses at grade levels other than the grade level in which they were enrolled, and (3) the practice of administrators designating students enrolled to the highest grade in which they took courses. These factors combined to produce decreasing costs from grade ten to grade twelve rather than the opposite trend which was established in the analysis of direct instructional cost.

Sub-Problem 17. What were the total educational per student-enrolled costs by function-object-expenditure classification?

Per student-enrolled costs were determined for each category of the function-object classification used in the study for each comprehensive and for the population.

The average cost per student-enrolled for the Administration, 100

Series, which included all non-resident administrative costs, was $31.45. The average per student cost of Series 200 Instruction was $628.13 with teachers' salaries accounting for $460.39. The individual school unit costs varied from $688.88 in Comprehensive A to $526.41 in Comprehensive D.

Student transportation costs were $76.94 in Comprehensive D, the only comprehensive charged with transportation costs. This amounted to an average population per student-enrolled cost of $3.05.

Plant Operation Costs, Series 600, ranged from $178.47 in Comprehensive A to $69.24 in Comprehensive B with an average per student-enrolled cost of $97.64. Plant maintenance, Series 700, averaged $10.69 per student-enrolled in the population with no uniformity of expenditure pattern being established between comprehensives.

Fixed Charges, Series 800, averaged $13.57 per student-enrolled in the population with a range from a high in Comprehensive B of $22.28 to a low of $8.87 in Comprehensive G. Food Service salary costs, Series 910 averaged $6.15 per student-enrolled in the population, with no food service function being provided in Comprehensive F. Cost of food service salaries varied from $20.95 in Comprehensive C to $3.30 in Comprehensive G.

Expenditures for Student Body Activities, Series 1000, were only made by Comprehensive E, a cost of $0.69 per student enrolled. This produced an average cost of $0.05 for the population.

Capital Outlay, Series 1200, averaged $5.84 per student-enrolled

for the population, while Debt Service, Series 1300, averaged $85.31 per student enrolled. No debt service payments were made by Comprehensive J, while Comprehensive D had the highest student-enrolled cost at $191.69. Transfer, Series 1400, affected only two comprehensives resulting in a population average cost of $0.13.

The average total educational unit cost for the comprehensive population was $882.03.

Sub-Problem 18. What were the aggregate unit costs of twenty-three curricular programs using the program budget format?

A two-dimensional approach was used to report the combined function-object classifications by curricular programs. The proration base utilized was the dollar volume of expenditures in direct instruction. Two expenditure breakdowns were provided, the per student cost of each curricular program in the population comprehensives, and the per cent of total expenditure this curricular program unit cost represents.

Five of the curricular programs received the greatest emphasis, in terms of the total educational funds allocated. English, mathematics, science, social studies and business education. Modern languages, physical education, fine arts, home economics and mechanical received moderate emphasis. Christian Ethics, in the academic programs, and all of the technical-vocational subjects, with the exception of business education and mechanical, received the least financial emphasis.

The percentage of total expenditure allocated to direct instruction was 48.46 per cent; to indirect instruction, 3.63 per cent; and to general implementary, 19.13 per cent. Of the remaining function-object categories, plant operation, 10.69 per cent; debt services, 9.67 per cent; and general administration, 3.56 per cent, represented the greatest expenditure in relation to the total educational cost. Plant maintenance, fixed charges and aggregated transportation, food services, student body, capital outlay and transfer expenditures represented a total percentage outlay of 4.48 per cent.

Sub-Problem 19. What were the ancillary expenditures made by school authorities, other than comprehensive school boards, for the transportation of comprehensive students?

Ancillary expenditures were made for the transportation of students attending Comprehensives A, B, C, E, J and K. Costs per student-enrolled for ancillary services ranged from $100.34 in Comprehensive C to $15.71 in Comprehensive A. The total ancillary costs resulted in an increase of $18.03 to the total educational unit cost per student-enrolled in the population.

Sub-Problem 20. What were the capital "use" costs in terms of building, site and equipment for the school year 1970-1971?

The capital building and site "use" cost per student-enrolled varied from $110.15 in Comprehensive E to no expenditure in Comprehensive F where the debt service capital payment exceeded the capital building and

site "use" cost. The average per student-enrolled capital building and site "use" cost was $36.85 for the population.

The capital equipment "use" cost averaged $63.83 per student-enrolled in the population. Comprehensive A had the highest per student-enrolled cost of $104.95 for capital equipment use, and Comprehensive F had the lowest at $39.10.

These unit costs did not represent expenditures made by the administrative authorities of the comprehensive schools during the 1970-1971 school year, but they were complementary costs, which represent a "use" cost for the school year regardless of when the original capital expenditures were made. These findings, particularly in capital equipment "use" costs have implications for the establishment of capital reserve budgeting in the comprehensive schools.

Sub-Problem 21. What was the complete educational per student-enrolled costs by each of the population comprehensive schools?

Complete Educational Costs were the sum of Total Educational Costs plus complementary costs. The Complete Educational Costs per student-enrolled in the population was $1,001.73. Cost varied in the comprehensives from $1,266.94 in Comprehensive A to $802.07 in Comprehensive G, with Comprehensives F, G, H and I having Complete Educational Costs per student-enrolled of under $1,000.00

A trend towards economies of scale became evident on the Complete

Educational Cost dimension, in that the four comprehensives with the largest enrollment had the lowest unit cost per student in the population. This trend was the result of lower per student-enrolled complementary costs, in these four comprehensives, than in the remaining seven comprehensives in the population.

II. CONCLUSIONS AND IMPLICATIONS

This section is subdivided into two parts: (1) general conclusions with broad implications, and (2) specific conclusions with implications for the population comprehensives analyzed.

General Conclusions

The general conclusions of this study were structured on the basis of the four anticipated results of the study listed on page 11 in Chapter 1 of this study.

1. Integration of Cost Analysis. This study integrated the conventional function-object accounting format with a curricular program design. This approach facilitated a cost interpretation of existing priorities to be examined in relation to the total curricular programs offered within the comprehensives. The presentation of cost data and cost differences provided decision-makers with an over-all operational cost picture and identified specific areas for analysis in which the cost priorities established did not meet the basic

objectives of the comprehensive.

The classification of expenditures into direct, indirect, and implementary categories provided a framework for the consideration of cost implications. In the population, 48.46 per cent of total educational expenditures were devoted to direct instruction. Of this amount scheduled class periods represented 82.56 per cent and teacher general preparation time represented 17.44 per cent within the population. The isolation of direct instructional cost was an important step in the determination of a total cost picture. The indirect instructional expenditures amounted to 3.63 per cent of total educational cost which did not support the generally held assumption of the relatively high cost of curricular program equipment and supplies. The assignment of teachers to conduct remedial programs, under the specific preparation time allocation, within indirect instructional time presents a staff time allocation priority for the consideration of decision-makers.

Implementary expenditures represented the remaining 47.91 per cent of total educational costs. Within this amount the prorated teacher salary costs for three non-curricular program functions, general service function, auxiliary service function and supervisional activities accounted for 27.55 per cent of the total implementary cost. The value of, and the necessity for, supervisional activities for Division IV students is an area in need of further examination by decision-makers. The use of teaching personnel for auxiliary service function activities that could possibly be performed by non-certificated personnel is

another area requiring further decision-maker analysis within the general implementary classification.

The presentation of unit cost on two bases: cost per student-course and the conventional per student-enrolled, provides decision makers with an additional dimension with which to analyze curricular program costs. Per student-course costs may be very high in a specific curricular area, but the cost per student enrolled may be low, indicating a high cost low-demand curricular program. This raises questions of efficiency, student retention, and breadth of curricular program offering for the decision-maker, in formulating policies in these areas.

The programmatic design utilized in this study provided the first step in the development of program budgeting. The advantages of a program budget format as an information source for decision-makers when compared to the function-object classification were documented.

2. The function of cost analysis in economic planning processes. Cost analysis was seen as an integral part of the economic planning processes, cost-benefit analysis, cost-effectiveness analysis and PPBS. The three main functions of cost analysis in relation to these processes were to: (1) determine past unit costs of the operation of the system; (2) determine present costs of the system; and (3) evaluate, in terms of cost, the decisions made resulting from the analysis conducted in the three planning processes.

The current difficulty of isolating the objectives and benefits of

education made the use of the three economic processes in education peripheral at this time. The need for a concerted effort to determine educational objectives and benefits as a basis for the evaluation, in fiscal terms, of the on-going operation of educational systems was well documented. Until the three economic processes named or other planning processes become operational, cost analysis remains as a currently functional technique to provide decision-makers with expenditure information upon which to base educational planning decisions.

3. Baseline data. One of the purposes of this study was to provide baseline data for the individual comprehensives, and the population of comprehensives in the Province of Saskatchewan. This objective was achieved, within the limitations of the study and the data available within the population. This study presented a unit cost analysis of each comprehensive as well as normative data permitting population comprehensive comparison, particularly on aggregated totals of the major function-object classifications.

The value of the provincial function-object standardized accounting system for obtaining cost data was recognized. However, the need for a more uniform basic accounting system, within the various local administrative units was demonstrated. Extended standardization of expenditure accounts, an expansion of accounts maintained, and more uniform reporting procedures at the local level, would facilitate local cost analysis and the development of comparative cost data within the province.

The second important need identified related to a reporting format to provide more information than the function-object classification currently utilized in the province. The use of a program accounting format within the school jurisdictions in the province, would provide decision-makers at all levels with a program oriented cost picture. This format provides a basis to evaluate the objectives of the system, and a measure to monitor any changes in priorities set for the achievement of these objectives.

The inclusion of capital "use" costs in terms of building, site and equipment in cost analysis provided decision-makers with two types of base-line data. The first type, the capital "use" costs of building and site provided a basis for decisions relative to the building of additional comprehensive schools. The question becomes, What is the economic feasibility of new buildings in terms of the resulting per student-enrolled "use" costs in the future? A second consideration is the establishment of a minimum potential enrollment figure which make the building of this type of school feasible.

The second type of capital "use" cost considered was capital equipment "use" cost and the need to establish capital equipment reserve allocations in budgets from the beginning of the operation of a new comprehensive. The ten year gross life expectancy used in this study should be refined by more detailed analysis of individual equipment life expectancy to rationalize capital equipment reserve budgeting.

4. Findings applicable to budgeting, data processing, evaluating, and decision-making processes in Saskatchewan. The finding of this study established the fact that decision-makers in the Province of Saskatchewan recognized the need for cost analysis information for individual school jurisdictions and the need for comparative data between school jurisdictions in the province. This information was seen to be a necessary decision-making input for the budgeting process, an evaluation of the ongoing school operation, and a means of planning for quality education within the bounds of economic feasibility.

This study provided only cost data for the population of comprehensive high schools in the province. Cost analysis studies could be made available to other school jurisdictions within the Province upon request. This study provided the necessary framework, computer programs, and reporting procedures to conduct basic cost analysis studies within school systems in the province, and serves as a basis for more refined analysis procedures in the future.

The question of making this type of analysis available throughout the province remains to be answered.

Specific Conclusions and Implications

The descriptive nature of this study allows few generalizable conclusions. However within each of the cost analysis categories cost differences appear which give scope to specific analysis implications. The following

specific conclusions and implications are structured to utilize the basic framework of the study.

Direct Instructional Costs. The wide variation of course costs within the comprehensives points to the need for a close examination by decision-makers of: (1) the establishment of minimum course enrollment guidelines, (2) the examination of the variety and number of courses offered within each curricular program, and (3) the determination of required numbers of courses to be offered in high cost - low demand curricular programs.

Approximately twenty-five per cent of the student-course enrollment total within the comprehensives was within the vocational-technical area.

Over half of these student-courses were in the business education curricular program. This information indentified two areas for further consideration. Why was the student-course enrollment so low in the non-business education programs in the technical-vocational area? What can decision-makers do to increase the enrollment in these curricular programs?

Four basic causes for the low enrollment in the non-business education technical-vocational curricular programs appear to emerge. The first three may be aggregated under the general heading of benefits. Students enrolled in these curricular programs were not assured of: (1) acceptance in all faculties at university, (2) complete recognition of previous achievement at the technical-vocational institutes, and (3) recognition of the time spent in these courses by a reduction of the apprenticeship period, should they enter

a trade. The fourth reason appears to have sociological implications, in that high achieving students took academic rather than technical-vocational classes.

Suggestions for educational decision-makers relative to increasing technical-vocational course enrollment appear to separate into three categories: (1) analysis of the courses offered within curricular programs; (2) interaction between decision-makers in universities, technical-vocational institutes and labour boards, and comprehensive schools, and (3) public relations to promote acceptance of technical-vocational programs and the objectives established for these programs, by students and interested publics.

In the analysis of the courses offered in the technical-vocational area the following questions appear relevant. (1) Should there be a greater provincial standardization of course content? (2) Are too many courses being offered within curricular programs? (3) What specific objectives form the basis of priorities currently in operation relative to the course offerings in this area?

Progress has been made in the acceptance of students using technical-vocational courses as electives within some faculties at the universities. Renewed effort on the part of secondary education decision-makers is still required to communicate with university, technical-vocational, and labour board decision-makers to assure students enrolled in technical-vocational courses a greater "pay-off" than psychic benefit.

Public relations to gain public and student support of the value of technical-vocational courses provides no easy or rapid solution. The problem is to change a long-held-misconception of the role of technical-vocational programs at the secondary school level. Concentrated and unified efforts of all education personnel is required to make any headway in this area.

Finally, in the direct instructional unit cost area, consideration should be given to the wide variation of general preparation time assigned to teachers within the comprehensives. A clarification of this time allotment should be made by mutual discussion among certificated personnel, and resident and non-resident comprehensive officials, to ensure that the objectives of this time allotment are achieved.

Indirect Instructional Costs. Two conclusions with implications emerge in this section of the study: (1) the need for more detailed accounting procedures in some of the comprehensives to obtain exact costs of the supply and equipment expenditures made in each curricular area and (2) the introduction of remedial assistance for all students and the assignment of specific preparation time to achieve this goal.

The current practice of aggregating instructional costs should be revised so that exact expenditure records are maintained within each curricular area. The increased accounting requirements would be well justified by the information output for planning purposes within each curricular area and provision of

basic information for future cost analysis studies.

The provision of remedial assistance for students in all curricular programs through the assignment of specific preparation time to teachers appeared to have merit in the comprehensive schools where this program was operable. An analysis of the benefits and costs of such remedial programs in each of the comprehensives appears to be warranted.

Implementary Costs. Many of the expenditure categories in implementary costs were beyond the immediate control of educational decision-makers, e.g. fixed charges, transportation costs, maintenance costs, debt service, transfer charges. However, four areas which require further analysis, relate to those costs which can be readily identified: (1) supervision service costs, (2) plant operation costs, (3) auxiliary service function costs, and (4) general service function costs.

The variation in priorities which govern expenditures for student supervision requires that decision-makers re-evaluate the need for this function within comprehensive schools. The two schools of thought, mirrored by the expenditures for this function, appear to be that students do, or do not require supervision. If it is determined, within specific comprehensives, that supervision of students is required, then a second question arises. Should the supervision be provided by certified teachers or could para-professional personnel perform the function to the desired standard, resulting in a lower per-student-enrolled cost?

Plant operation costs varied throughout the comprehensives, apparently unrelated to school size, total energy facilities, or type of program offered within the school. Further analysis of plant operation costs are required throughout the comprehensives to determine the expenditure needs in the area. Specific suggestions include: (1) inservice education for building superintendents to determine viable work schedules for caretaking staffs, (2) determination of supply needs, (3) determination of hourly utility and caretaking costs to establish adequate rental scales for building facilities for non-comprehensive program building use, and (4) the cost investigation of privately contracted caretaking services for each comprehensive.

The costs incurred in the auxiliary service function programs conducted within the comprehensives should be analyzed to see if the priorities established during the 1970-1971 school year met the pre-determined objectives in this area. The cost of internal substitution within the population is an example of a program requiring further analysis.

General service function costs varied throughout the comprehensives pointing to the need for detailed analysis in this area. The following questions exemplify the types of further analysis which may be considered in this area. What guidance counselling provisions are necessary for Division IV students? Are educational television production facilties economically feasible in terms of the curricular program materials produced and rebroadcast? What is the most practical student enrollment before department heads are appointed?

Is student attendance supervision and accounting necessary at the Division IV level? Should audio-visual technicians be utilized in all comprehensives? These and other questions of relevance to individual comprehensives are suggested as areas of further research.

Capital "Use" Costs. The relevance of capital building and site costs have been discussed previously in relation to the construction of additional comprehensive schools (supra: 268). This section emphasizes capital equipment "use" costs conclusions and implications.

The need for accurate capital equipment inventory and depreciation schedules has been discussed previously in this Chapter. However one implication relative to capital equipment expenditure being evaluated currently in the Province of Alberta requires comment.

In view of the limited enrollment in some of the vocational-technical curricular programs, and the need for large capital expenditures to equip the laboratories in these areas some type of capital equipment and maintenance lease contracting appears to be economically feasible.

The basic premise for capital equipment lease contracting is that only equipment required for the student enrollment within given curricular programs would be leased from a private or a public leasing agency. This would reduce the need to purchase complete laboratory equipment required in each curricular area, would overcome variations in student enrollment and would minimize the cost for depreciation and obsolesence. A pool of capital equipment could

supply the needs of each comprehensive school.

A second consideration in this area has implications for post-secondary education. The comprehensive schools, as structured and equipped, offer most of the provisions necessary to house and instruct community college programs. The benefits of such programs are well recognized. The cost of using the comprehensive buildings and equipment after the regularly scheduled high school day program would encourage the introduction of community colleges in existing facilities, and would appear to be economically feasible as well as sociologically desirable.

Total and Complete Educational Costs. A general concern expressed in relation to cost analysis and program accounting questions the use that may be made of the cost data produced and the implications that such data may have for educational planning. It is frequently argued that the input data of the decision-making process, measured in expenditures, will receive more emphasis than the more difficult-to-measure outputs desired. However, cost data alone is of little functional value unless the related general and performance objectives of the system form the basis of all comparisons.

A second concern associated with cost analyses is the implication that teachers' professional activities are limited to the assigned time indicated by the school master timetable. Recent studies on the average work week of secondary teachers show that the timetable scheduled activities of teachers form only part of their education related activities. Teachers perform

many obligatory and voluntary tasks outside of the allocated time schedule, and put in many hours of self-directed activity related to their professional role.

In general, cost analysis data in the form of total or complete educational costs are only a determination, in expenditure terms, of the priorities currently operable within a school or a school system. The value of the data output lies in the use to which it is put by decision-makers to plan future objectives and priorities, within a cost framework, for the improvement of education.

III. SUGGESTIONS FOR FURTHER RESEARCH

A number of suggested avenues for further research have been proposed throughout this study. These suggestions can be categorized into two subdivisions: (1) internal design of cost analysis studies and (2) other possible approaches to cost analysis.

Internal Design of Cost Analysis Studies

Subsequent researchers of the cost analysis process in education be guided by the following suggestions:

(1) A more refined method of capital cost proration is required in terms of the need for definitive depreciation and obsolescence rates, and also the need to determine net costs within each curricular area.

(2) Computer programs should be refined to allow the input data to be reduced and to enable a unified and complete output of all related costs to be obtained in a one step process.

(3) Provision should be made for the control of input categories such as teacher salaries, resident implementary costs, etc., to determine further relationships within cost categories.

(4) Standard units, in the form of student-equivalents, total enrollment equivalents, credit equivalents and time equivalents should be incorporated into the process.

(5) A diary approach to certificated and non certificated personnel activity within schools should be used to obtain exact faculty workload survey data rather than the estimated data currently available.

Other Possible Approaches to Cost Analysis

Extensions to the cost analysis approach used in this study are numerous, however some specific suggestions may prove of benefit.

The first extenstion suggested is the development of a predictive function to the cost analysis framework utilized in this study. Such a function would provide decision-makers with a longitudinal evaluation of priority decisions made at the present time.

The development of cost analysis procedures as an integral part of cost-benefit, cost-effectiveness and PPBS processes should be an on going process as output evaluation measures are established in education.

The relation between intergovernmental fiscal transfer agreements and educational costs should be evaluated to determine their effect on expenditures at the school system level.

The introduction of provincial data banks for cost analysis information, in terms of faculty workload information and expenditure data, should be considered as a logical extension to isolated cost studies.

Cost analyses serve primarily as the starting point for subsequent studies of various degrees of specificity. The allocation decisions made by educational decision-makers are improved when cost data is readily available.

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APPENDIX A

PRELIMINARY ACTIVITIES

Province of Saskatchewan

DEPARTMENT OF EDUCATION

OFFICE OF THE DEPUTY MINISTER

JEW/pm

Regina, Saskatchewan,
May 26, 1970.

To: Chairmen of School Boards and
Principals of Comprehensive High Schools

The bearer of this letter, Mr. A. J. Guy, has revealed his entire plan for the study "A Unit Cost Analysis of Comprehensive High Schools in Saskatchewan" to senior officials in the Department of Education. We strongly endorse this study as the documentation will be of an intangible benefit to school boards in the province. May I solicit your co-operation in making available to Mr. Guy the information he requests.

Province of Saskatchewan

DEPARTMENT OF EDUCATION

EHF/emm

Avord Tower,
Regina, Saskatchewan,
May 25, 1970.

Dear Mr. Guy:

I am pleased to endorse your study on the Unit Cost Analysis of the Comprehensive High Schools in Saskatchewan. I understand that you are undertaking this study on behalf of the Saskatchewan School Trustee Association as part of their research program and as part of your own study for your doctoral degree in Educational Administration.

I am sure you will obtain the co-operation and support of the principals and staffs of the various schools as the result of your research may have far reaching implications for comprehensive education in Saskatchewan.

SASKATCHEWAN SCHOOL TRUSTEES ASSOCIATION
570 AVORD TOWER PHONE 522-7685 REGINA, SASKATCHEWAN

February 27, 1970

Mr. A. J. Y, Guy
Department of Educational Administration
801 General Services Building
University of Alberta
Edmonton, Alberta

Dear Mr. Guy:

As Mr. Langlois has informed you, the Executive of the Saskatchewan School Trustees Association has approved sponsorship of your suggested study entitled, "A Unit Cost Analysis of Comprehensive High Schools in the Province of Saskatchewan" up to a total of $10,000. We are somewhat at a loss to decide how the money should be made available for the study, particularly, since the study is not to begin until 1971.

With the sponsored studies which are being conducted through the University of Saskatchewan at both Saskatoon and Regina we pay the money at various appropriate times to the University through the office of the Business Manager. It is then released by him as needed on the requisition of the head of the division in which the study is being conducted.

We shall be pleased to hear whether similar arrangements are available at the University of Alberta, and also to have your opinion as to how this matter can be satisfactorily handled.

SASKATCHEWAN SCHOOL TRUSTEES ASSOCIATION
570 AVORD TOWER PHONE 522-7685 REGINA, SASKATCHEWAN

May 25, 1970

Mr. W. B. Knoll
Secretary-Treasurer
Regina Board of Education
1870 Lorne Street
Regina, Saskatchewan

Re: Research Project on Comprehensive High Schools

Mr. A. J. Guy, who is a Regina teacher doing graduate work at the University of Alberta, is conducting a study entitled, "A Unit Cost Analysis of Comprehensive High Schools" for the Research Branch of this Association. This will be a rather extensive study, and one which we feel is important to the major school systems of Saskatchewan.

In the course of his study, Mr. Guy will need certain information in regard to one or two of your schools, and this will be facilitated by the willing co-operation of your administration. We would be pleased if you would place before your Board our request for such co-operation with Mr. Guy in supplying any available information necessary for his study. Your assistance in this matter will be much appreciated.

SASKATCHEWAN SCHOOL TRUSTEES ASSOCIATION
570 AVORD TOWER PHONE 522-7685 REGINA, SASKATCHEWAN

May 25, 1970

Mr. W. G. Fleming
Secretary-Treasurer
Yorkton Regional High School Board
Darlington Street & Myrtle Avenue
Yorkton, Saskatchewan

Re: Research Project on Comprehensive High Schools

Mr. A. J. Guy, who is a Regina teacher doing graduate work at the University of Alberta, is conducting a study entitled, "A Unit Cost Analysis of Comprehensive High Schools" for the Research Branch of this Association. This will be a rather extensive study, and one which we feel is important to the major school systems of Saskatchewan.

In the course of his study, Mr. Guy will need certain information in regard to one of your schools, and this will be facilitated by the willing co-operation of your administration. We would be pleased if you would place before your Board our request for such co-operation with Mr. Guy in supplying any available information necessary for his study. Your assistance in this matter will be much appreciated.

SASKATCHEWAN SCHOOL TRUSTEES ASSOCIATION
570 AVORD TOWER PHONE 522-7685 REGINA, SASKATCHEWAN

May 26, 1970

TO SCHOOL BOARDS OPERATING COMPREHENSIVE
SCHOOLS AND THEIR OFFICIALS

The bearer of this letter, Mr. A. J. Guy, is a doctoral student at the University of Alberta who is conducting a study entitled, "A Unit Cost Analysis of Comprehensive High Schools in Saskatchewan", for the Saskatchewan School Trustees Association. Mr. Guy was a very efficient Saskatchewan school principal before embarking on his graduate work at the University of Alberta. He was highly recommended to the Research Committee of your organization as a competent person to do this study. Working with Mr. Guy in an advisory and supporting capacity is a group of senior professors of the University of Alberta.

I am certain that the Research Committee believes that this study will be of great value to education in our Province and especially to urban school boards who are operating comprehensive schools.

It is my sincere hope and that of the Research Committee that you will find it possible to co-operate with Mr. Guy in this study and provide him with the data which is necessary to make valid his findings and the study useful to the school boards of the Province.

THE SASKATOON COLLEGIATE INSTITUTE BOARD

F. J. GATHERCOLE, B.A., Ed.D.
Director of Education

OFFICES: 211 FOURTH AVENUE SOUTH
SASKATOON
Sask.

EDWARD WEDGE, B.Acc., F.C.I.S.
Secretary-Treasurer

June 3, 1970.

Mr. L.I. Thorson,
Executive Secretary,
Saskatchewan School Trustees Association,
570 Avord Tower,
REGINA, Saskatchewan.

Dear Mr. Thorson:

RE: Research Project on Comprehensive High Schools

The Saskatoon Collegiate Board will be pleased to co-operate with your association and with Mr. A.J. Guy in your research study entitled "A Unit Cost Analysis of Comprehensive High Schools".

May I suggest that when Mr. Guy wishes to work in Saskatoon he get in touch with me so that we may make available to him whatever information he should require in this regard.

THE BOARD OF EDUCATION

FOR

THE REGINA PUBLIC SCHOOL DISTRICT No. 4 OF SASKATCHEWAN

AND

THE REGINA COLLEGIATE INSTITUTE

COPY
for your information

ADMINISTRATION OFFICES
Change of Address
1870 Lorne Street
Regina, Sask.
1300 COLLEGE AVE.
REGINA, SASK.

June 12, 1970,

Mr. L. I. Thorson,
Executive Secretary,
Sask. School Trustees' Association,
570 Avord Tower,
Regina, Saskatchewan.

Dear Sir:

Re: Research Project on Comprehensive High Schools

Your letter of May 25, 1970 regarding the above-mentioned Research Project was considered by the Board at its meeting on June 10.

I would advise you that the Board has agreed to co-operate with you by assisting Mr. Guy with his study.

THE SASKATCHEWAN TEACHERS' FEDERATION

2317 ARLINGTON AVENUE SASKATOON, SASKATCHEWAN BOX 1108 PHONE 373-1660

I am pleased to endorse the study being undertaken by Mr. Alex J. Guy, Department of Education Administration, University of Alberta, Edmonton 7, Alberta, and I hope that you will find it possible to assist him in his work.

This research will make a study of the real costs of subjects, programs, and administration in eleven comprehensive high schools in Saskatchewan.

The collection of data, especially the staff workload surveys, will be conducted in September and again in February in semester based schools.

The importance of this study at the present time is obvious. The information will be of value in decisions concerning budgeting, grants, and structuring programs.

The study should be completed in August, 1971, and a report will be available to each participating school and a copy of the study will be in the Saskatchewan Teachers' Federation library.

APPENDIX B

DETERMINATION OF COURSES OFFERED

Province of Saskatchewan

DEPARTMENT OF EDUCATION
Applied Arts and Sciences

Avord Tower,
Regina, Saskatchewan.
July 15, 1970.

c.c. Mrs. A. Sojonky
LAR/cz

Dear Mr. Guy:

Further to our talks about the research study on comprehensive high schools, it does not appear likely that we will have the kind of course breakdown you will require to do the unit cost analysis suggested in your study. Mrs. A. Sojonky is at the moment in touch with various Branches of the Department of Education which are now in the process of reviewing and revising forms for the collection of data. I would suggest that you contact her prior to planning your series of fall visits in order to identify any information which might be available through routine Departmental forms. One problem, of course, is the matter of timing - our information may not be available until late in this calendar year or the beginning of the next.

If you happen to be in Regina, and have the time, I would much appreciate hearing further from you about the progress of your study.

MELFORT AND UNIT COMPREHENSIVE COLLEGIATE

MELFORT, SASKATCHEWAN

SCHOOL OFFICE
BOX 99

BUSINESS OFFICE
BOX 2110

June 25, 1970.

Mr. Alex Guy,
Department of Educational Administration,
801 General Service Building,
University of Alberta,
EDMONTON 7, Alberta.

Dear Sir:

In response to our telephone conversation the other day, I give you the following outline. For the coming year 1970-71, we will be offering the following courses.

Grade IX

Home Economics, Orientation in (Electrical, Metal, Voc. Agriculture, Drafting).

Grade X

English (Literature and Composition),Mathematics (Mod. Algebra and Geometry). Commercial Mathematics, Shop Mathematics, General Mathematics, Science, Social Studies, Geography, French, Home Economics, Physical Education Credit, Bookkeeping, Typing, Food Service I, Food Service II, Farm Mechanics, Agricultural Technology, Engineering Technology, Electrical Technology, Electrical Vocational, Drafting Technology, Drafting Vocational, Motor Mechanics, Metal, Construction, Auto Service.

Grade XI

English (Literature and Composition),Algebra (Modern),Geometry, Shop Mathematics, Commercial Mathematics, Biology (B.S.C.S.),Chemistry (CHEM Study), Physics (P.S.S.C.), Physics (Modern), Social Studies, Geography, French, Home Economics, Physical Education Credit. Typing, Bookkeeping, Shorthand, Business Machines, Drafting Technology, Drafting Vocational, Electrical Technology, Electricity, Motor Mechanics, Metal, Construction.

Grade XII

English (Literature and Composition), Algebra (Modern), Geometry-Trigonometry. (Modern), Shop Math, Biology (B.S.C.S.), Biology (Traditional).Chemistry (CHEM Study), Physics (P.S.S.C.), Physics (Modern), Social Studies. Economics. Typing & Office Practice, Mathematics & Business Machines, Bookkeeping. Shorthand, French, Home Economics, Physical Education Credit, Food Service I. Food Service II, Electrical Technology, Drafting Technology, Drafting Vocational. Motor Mechanics, Metal, Construction, Agricultural Technology, Agricultural Machines, Farm Mechanics.

Special Commercial

Business English, Economics, Typing & Office Practice, Mathematics and Business Machines, Bookkeeping, Shorthand.

Hope that the above information is adequate. Will be at school during August so you may want to contact me then if further information is required.

APPENDIX C

FACULTY WORKLOAD SURVEY QUESTIONNAIRES

INSTRUCTION 200 a) DIRECT SALARIES (CLASSROOM TEACHER'S WORKLOAD SURVEY)

NAME _____ SCHOOL _____ SEMESTER _____

CERTIFICATE NUMBER _____ BASIC SALARY _____ SEX _____

SALARY CLASSIFICATION _____ EXPERIENCE (Present Increment) _____

Courses Taught	Course Time in Min. Per Week	Grade or Level	Form or Class Section	Enrolment Per Course	Length of Course Semester	Length of Course Full Year	Is this Course Team Taught? YES	Is this Course Team Taught? NO

General Preparation Time	
Specific Preparation Time	
Supervisional Time	
TOTAL TIME (MIN.)	

1. Please specify preparation and supervisional time in detail on the form provided at the right.

2. Example of Total Time: 8 periods of 40 minutes for 5 days = 8 x 40 x 5 = 1,600 minutes.

3. If course is taught by a team teaching unit, please list the TOTAL number of students you instruct in the course.

PREPARATION TIME:

Please list your preparation tim two Classifications:

GENERAL PREPARATION TIME - release t lieu of classes taught

SPECIFIC PREPARATION TIME - release granted in lieu of time spent on act ties other than classes taught. Ple list activities and specific prepara time granted.

PREPARATION TIME	TIME MIN. PER W
GENERAL PREPARATION TIME	
SPECIFIC PREPARATION TIME ACTIVITY	
TOTAL PREPARATION TIME	

SUPERVISIONAL TIME:

Time allocated each week for sup vising (not instructing) students, e home room supervision, study room su vision, etc.

Please list each supervisory act performed and the amount of time all cated to each activity.

SUPERVISORY ACTIVITY	TIME MIN. PER W
TOTAL SUPERVISORY TIME	

DIRECT SALARIES (PRINCIPALS, VICE-PRINCIPALS, DEPARTMENT HEADS AND COUNSELLORS)

NAME _____ SCHOOL _____ SEMESTER _____

POSITION _____ BASIC SALARY _____ ADMINISTRATIVE ALLOWANCE _____

SEX _____ CERTIFICATE NO. _____ SALARY CLASSIFICATION _____ EXPERIENCE (Present Increment)___

Courses Taught	Course Time in Min. Per Week	Grade or Level	Form or Class Section	Enrolment Per Course	Length of Course Semester	Length of Course Full Year	Is this Course Team Taught? YES	Is this Course Team Taught? NO

General Preparation Time	
Specific Preparation Time	
Supervisional Time	
TOTAL TIME (MIN.)	

1. Please specify preparation and supervisional time in detail on the form provided at the right.

2. Example of Total Time: 8 periods of 40 minutes for 5 days = 8 x 40 x 5 = 1,600 minutes.

3. If course is taught by a team teaching unit, please list the TOTAL number of students you instruct in the course.

PREPARATION TIME:

Please list your preparation time in two Classifications:

GENERAL PREPARATION TIME - release time lieu of classes taught

SPECIFIC PREPARATION TIME - release time granted in lieu of time spent on activities other than classes taught. Please list activities and specific preparation time granted.

PREPARATION TIME	TIME MIN. PER WEEK
GENERAL PREPARATION TIME	
SPECIFIC PREPARATION TIME ACTIVITY	
TOTAL PREPARATION TIME	

SUPERVISIONAL TIME:

Time allocated each week for supervising (not instructing) students, e.g., home room supervision, study room supervision, etc.

Please list each supervisory activity performed and the amount of time allocated to each activity.

SUPERVISORY ACTIVITY	TIME MIN. PER WEEK
TOTAL SUPERVISORY TIME	

COURSE TIME (PAGE 1)	_____	Min. Per Week
ADMINISTRATIVE TIME	_____	Min. Per Week
COUNSELLING TIME	_____	Min. Per Week
OTHER (Specify)	_____	Min. Per Week
_____	_____	Min. Per Week
TOTAL	_____	MIN. PER WEEK

PRORATION OF ADMINISTRATIVE OR COUNSELLING DUTIES TO GRADE AND PROGRAM

NOTE: It is recommended that the following percentages be estimated for a one-week period.

MY ADMINISTRATIVE (COUNSELLING) TIME IS DIVIDED AMONG THE GRADES AS FOLLOWS:

	% of Time
GRADE 7	_____
GRADE 8	_____
GRADE 9	_____
GRADE 10	_____
GRADE 11	_____
GRADE 12	_____
_____	
TOTAL	100 %

NOTE: In prorating Administrative and Counselling Time in the column on the right:

(a) Time spent equally over all academic subjects should be listed as Academic Time.

(b) Time spent equally over all vocational-technical subjects should be listed as Vocational-Technical Time.

MY ADMINISTRATIVE (COUNSELLING) TIME IS DIVIDED AMONG THE PROGRAMS AS FOLLOWS:

		% of Time
901	ACADEMIC	_____
908	ENGLISH	_____
909	MATHEMATICS	_____
910	SOCIAL STUDIES	_____
911	SOCIAL STUDIES OPTIONS .	_____
912	HOME ECONOMICS	_____
913	FINE ARTS	_____
914	SCIENCE	_____
915	PHYSICAL EDUCATION . . .	_____
916	MODERN LANGUAGES	_____
917	CHRISTIAN ETHICS	_____
902	VOCATIONAL-TECHNICAL	_____
918	STRUCTURAL	_____
919	VOCATIONAL A	_____
920	MECHANICAL	_____
921	MEDIA TECHNOLOGY	_____
922	TECHNOLOGY	_____
923	ELECTRICAL	_____
924	GENERAL	_____
925	INDUSTRIAL LABORATORY .	_____
926	DRAFTING	_____
927	COMMERCIAL COOKING . . .	_____
928	COSMETOLOGY	_____
929	AGRICULTURE	_____
930	BUSINESS EDUCATION . . .	_____
941	GUIDANCE - STUDENT COUNSELLING	_____
942	LIBRARY	_____
943	AUDIO-VISUAL	_____
944	TELEVISION	_____
	TOTAL	100 %

FULL TIME SUPERVISORS, GUIDANCE COUNSELLORS, AUDIO-VISUAL - TECHNICIANS, LIBRARIANS, INTERNS

NAME _____ SCHOOL _____

POSITION _____ SEX _____

CERTIFICATE NO. _____ BASIC SALARY _____ SUPERVISORY ALLOWANCE _____

SALARY CLASSIFICATION _____ EXPERIENCE (Present Increment) _____

ESTIMATION OF TIME SPENT BY GRADES AND PROGRAMS

NOTE: It is recommended that the following percentages be estimated for a one-week period.

MY TIME IS DIVIDED AMONG THE GRADES AS FOLLOWS:

	% of Time
GRADE 7	_____
GRADE 8	_____
GRADE 9	_____
GRADE 10	_____
GRADE 11	_____
GRADE 12	_____
_____	_____
TOTAL	100 %

NOTE: In prorating your time spent among the programs:

(a) Time spent equally over all academic subjects should be listed as Academic Time.

(b) Time spent equally over all vocational-technical subjects should be listed as Vocational-Technical Time.

MY TIME IS DIVIDED AMONG THE PROGRAMS AS FOLLOWS:

		% of Time
901	ACADEMIC	_____
908	English	_____
909	Mathematics	_____
910	Social Studies	_____
911	Social Studies Options .	_____
912	Home Economics	_____
913	Fine Arts	_____
914	Science	_____
915	Physical Education . . .	_____
916	Modern Languages	_____
917	Christian Ethics	_____
902	VOCATIONAL-TECHNICAL	_____
918	Structural	_____
919	Vocational A	_____
920	Mechanical	_____
921	Media Technology	_____
922	Technology	_____
923	Electrical	_____
924	General	_____
925	Industrial Laboratory .	_____
926	Drafting	_____
927	Commercial Cooking . . .	_____
928	Cosmetology	_____
929	Agriculture	_____
930	Business Education . . .	_____
941	GUIDANCE - STUDENT COUNSELLING	_____
942	LIBRARY	_____
943	AUDIO-VISUAL	_____
944	TELEVISION	_____
	_____	_____
	TOTAL	100 %

SCHOOL CLERICAL STAFF, TEACHER AIDES

NAME _____ SCHOOL _____ SEX _____

POSITION _____ ANNUAL SALARY _____

MY TIME IS DIVIDED IN THE FOLLOWING MANNER:

	% of Time
Administrative Related Activities	_____
Material Preparation for Teachers	_____
Attendance Keeping Activities	_____
Library Related Activities	_____
Teacher Aide Duties . . .	_____
Other Duties (Specify)	
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
TOTAL	100 %

NOTE: In prorating Administrative and Counselling Time:

(a) Time spent equally over all academic subjects should be listed as Academic Time.

(b) Time spent equally over all vocational-technical subjects should be listed as Vocational-Technical Time.

MY TIME DEVOTED TO MATERIAL PREPARATION FOR TEACHERS OR TEACHER AIDE DUTIES IS DIVIDED AMONG THE PROGRAMS AS FOLLOWS:

		% of Time
901	ACADEMIC	_____
908	ENGLISH	_____
909	MATHEMATICS	_____
910	SOCIAL STUDIES	_____
911	SOCIAL STUDIES OPTIONS	_____
912	HOME ECONOMICS	_____
913	FINE ARTS	_____
914	SCIENCE	_____
915	PHYSICAL EDUCATION . .	_____
916	MODERN LANGUAGES . . .	_____
917	CHRISTIAN ETHICS . . .	_____
902	VOCATIONAL-TECHNICAL	_____
918	STRUCTURAL	_____
919	VOCATIONAL A	_____
920	MECHANICAL	_____
921	MEDIA TECHNOLOGY . . .	_____
922	TECHNOLOGY	_____
923	ELECTRICAL	_____
924	GENERAL	_____
925	INDUSTRIAL LABORATORY .	_____
926	DRAFTING	_____
927	COMMERCIAL COOKING . .	_____
928	COSMETOLOGY	_____
929	AGRICULTURE	_____
930	BUSINESS EDUCATION . .	_____
941	GUIDANCE-STUDENT COUNSELLING	_____
942	LIBRARY	_____
943	AUDIO-VISUAL	_____
944	TELEVISION	_____
	_____	
	TOTAL	100 %

APPENDIX D

STUDENT ENROLLMENT AND TEACHER CHARACTERISTICS OF POPULATION COMPREHENSIVES

TABLE XXXI

STUDENT ENROLMENT IN COMPREHENSIVE SCHOOLS BY GRADE AND TOTAL BASED ON SEPTEMBER 30, 1970 AND FEBRUARY 28, 1971 ENROLMENT

Comprehensive	Grade 8	Grade 9	Grade	Grade	Grade	Total
A			313	223	251	787
B			231	182	201	614
C[a]		15	207	141	162	525
D			163	181	138	482
E			305	311	251	868
F	312	353	371	334	305	1675
G		485	418	383	346	1632
H		394	427	384	374	1579
I		369	428	382	370	1549
J			484	414	405	1303
K			375	400	356	1131
Total	312	1616	3722	3335	3159	12145

[a] A non-semested school - Enrolment as of September 30, 1970, adjusted to include part time Vocational-Technical and Home Economics students.

TABLE XXXII

ENROLMENTS BY CURRICULAR PROGRAMS IN THE POPULATION

Curricular Programs	A	B	C	D	E	F	G	H	I	J	K
Christian Ethics							1445				
English	751	1182	468	984	990	1704	1842	1565	1620	2582	1054
Fine Arts	187	145			57	1503	190	574	564	260	300
Home Economics	100	303	415	91	208	522	274	485	307	299	117
Mathematics	858	985	582	874	1063	2539	2062	2050	1970	1652	1330
Modern Languages	384	210	188	223	328	1421	676	930	1173	667	578
Physical Education	442	514	488	544	449	1040	964	1001	841	963	804
Science	1021	874	635	701	1174	2343	1648	1748	2124	1630	1497
Social Studies	1039	673	668	580	928	1869	1617	1727	1768	1258	1413
Agriculture	13	75	54							152	104
Business Education	973	376	402	354	702	578	1028	1187	907	1255	1245
Commercial Cooking	41		14		59		58	112	21	47	
Cosmetology	42				27		98			133	98
Drafting	53	134	63	69	26		58	154	418	82	91
Electrical	53	39	74	77	78		64	140	50	63	80
General	29		346			353	356		434	226	
Mechanical	87	82	152	116	179		119	313	283	396	372
Media Technology							50	30	179		124
Structural		41	42	69	16		31	97	79	39	88
Technology						167		216			
Vocational A	204				101					93	367
Driver Education		220									
Guidance		375									
Total	6277	6228	4591	4681	6385	17279	12571	12337	13201	11797	9661

TABLE XXXIII

AVERAGE TEACHING QUALIFICATIONS, AGE, EXPERIENCE AND SALARY OF TEACHERS BY SCHOOL

Comprehensive High School	No. of Teachers	Average Age	Average Salary	Average Experience (salary purposes)	Average Training (years)
A	43	37.87	9849.06	7.77	3.95
B	33.5	32.15	9444.09	6.34	4.03
C	33	35.45	8715.32	6.55	4.09
D	23	36.22	9839.69	6.52	4.33
E	44	39.63	10217.48	7.56	4.25
F	82	35.73	9985.67	6.49	4.56
G	79	32.68	9448.62	5.62	4.28
H	82	35.95	10973.00	6.91	4.69
I	79	36.62	11004.65	6.97	4.73
J	69.5	36.71	9902.69	6.14	4.12
K	59	38.52	11120.57	7.97	4.58

TABLE XXIV

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, AGE AND SALARY OF TEACHERS BY POPULATION

Total Number of Teachers	627
Average Salary	10,217.36
Average Age	36.10
Average Experience (for Salary Purposes)	6.76
Average Training (for Salary Purposes)	4.40

TABLE XXXV

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
Comprensive A							
Christian Ethics							
English	4.0	3.50	9.50	9,847.00	47.25	25.00	75.00
Fine Arts	1.0	4.00	8.00	10,688.00	38.00	100.00	
Home Economics	0.5	4.00	1.00	7,482.00	23.00		100.00
Mathematics	4.5	4.78	10.00	12,051.11	47.56	77.78	22.22
Modern Languages	2.0	2.50	6.00	6,930.00	43.50		100.00
Physical Education	2.5	4.00	6.20	9,723.00	28.60	40.00	60.00
Science	6.0	4.17	7.17	10,569.00	34.75	100.00	
Social Studies	4.0	4.25	7.50	10,620.00	39.75	75.00	25.00
Business Education	5.0	3.80	5.00	8,852.40	26.40	50.00	50.00
Vocational Technical	8.0	3.37	7.87	9,305.44	36.25	87.50	12.50

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
Comprehensive B							
Christian Ethics							
English	5	4.20	8.20	10,685.20	34.60	80.00	20.00
Fine Arts	1	6.00	2.00	8,960.00	27.00		100.00
Home Economics	2	2.50	3.50	6,142.00	25.00		100.00
Mathematics	4	4.12	5.12	9,389.25	27.75	100.00	
Modern Languages							
Physical Education	2	3.50	5.00	8,327.00	26.50	50.00	50.00
Science	3	4.50	6.93	10,078.00	31.83	100.00	
Social Studies	3	4.33	10.00	11,740.00	44.67	100.00	
Business Education	3	3.67	6.00	8,482.66	27.33	66.67	33.33
Vocational Technical	6	3.67	3.42	7,947.00	23.00	100.00	

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
Comprehensive C							
Christian Ethics							
English	3	4.00	6.67	10,161.66	36.67	100.00	
Fine Arts							
Home Economics	2	5.00	6.00	10,264.00	35.50		100.00
Mathematics	2	4.50	10.00	12,002.50	35.00	100.00	
Modern Languages							
Physical Education	2	3.50	7.00	9,104.50	30.00	50.00	50.00
Science	4	4.75	5.50	10,040.25	28.00	75.00	25.00
Social Studies	4	4.50	7.75	8,569.00	43.50	100.00	
Business Education	3	2.67	4.67	7,460.00	39.67		100.00
Vocational Technical	5	3.40	4.60	8,536.36	35.60	80.00	20.00

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Males	Per Cent Females
Comprehensive D							
Christian Ethics							
English	3	4.33	10.00	10,883.33	56.00	100.00	
Fine Arts							
Home Economics	1	4.00	5.00	9,250.00	32.00		100.00
Mathematics	4	4.50	7.25	10,525.75	40.75	50.00	50.00
Modern Languages	1	5.00	7.00	10,703.00	32.00	100.00	
Physical Education	2	3.00	4.00	7,669.50	26.00	50.00	50.00
Science	3	5.00	5.67	10,118.66	29.67	100.00	
Social Studies	1	5.00	10.00	12,020.00	57.00	100.00	
Business Education	2	2.50	3.00	7,325.00	25.00		100.00
Vocational Technical	3	3.83	6.67	9,211.33	30.00	100.00	

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS OF CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
Comprehensive E							
Christian Ethics							
English	6	4.50	7.42	10,686.16	37.25	75.00	25.00
Fine Arts							
Home Economics	1.5	3.33	7.00	10,200.00	48.33		100.00
Mathematics	5.5	4.45	9.09	11,161.09	42.36	81.82	18.18
Modern Languages	2	5.00	7.00	10,790.00	31.50	100.00	
Physical Education	2	3.00	5.50	8,461.50	37.50	50.00	50.00
Science	6	4.85	9.83	11,965.66	43.50	100.00	
Social Studies	4.5	5.00	5.67	9,980.22	31.00	100.00	
Business Education	4	3.25	7.50	8,969.75	43.00	37.60	62.50
Vocational Technical	7	3.21	6.14	8,180.71	35.57	78.57	21.43

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
Comprehensive F							
Christian Ethics							
English	13.5	4.78	6.41	10,273.00	38.81	44.44	55.56
Fine Arts	6.0	4.33	5.00	9,568.93	33.17	83.33	16.67
Home Economics	3.0	4.33	8.66	10,504.83	35.66		100.00
Mathematics	11.0	4.73	7.36	11,125.98	33.45	90.91	9.09
Modern Languages	6.0	4.33	7.33	10,591.56	37.00	33.33	66.67
Physical Education	6.0	4.08	2.75	7,892.33	26.83	50.00	50.00
Science	11.0	4.82	6.18	10,777.54	33.09	81.82	18.18
Social Studies	8.0	4.75	7.00	10,960.65	35.87	75.00	25.00
Business Education	3.0	4.00	8.33	9,868.80	42.33		100.00
Vocational Technical	7.0	4.00	5.14	9,611.59	35.14	100.00	

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
Comprehensive G							
Christian Ethics	4.0	4.75	2.25	8,820.25	26.60	100.00	
English	9.5	4.16	4.58	9,436.57	31.84	36.84	63.16
Fine Arts	0.5	5.00	6.00	10,760.00	44.00	100.00	
Home Economics	3.0	4.67	4.83	9,444.60	35.33		100.00
Mathematics	9.0	9.61	7.28	10,925.37	36.50	83.33	16.67
Modern Languages	5.0	4.60	5.10	9,970.36	30.50	60.00	40.00
Physical Education	4.0	4.25	4.00	8,384.49	26.75	50.00	50.00
Science	8.0	4.44	6.37	9,857.28	34.88	100.00	
Social Studies	7.0	4.50	5.64	9,868.66	30.86	78.57	21.43
Business Education	6.5	3.46	3.69	8,107.69	31.62	38.46	61.54
Vocational Technical	8.0	3.50	7.06	9,698.05	34.50	75.00	25.00

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
Comprehensive H							
Christian Ethics							
English	14.0	4.86	6.57	11,100.70	31.64	78.57	21.43
Fine Arts							
Home Economics	3.5	5.00	0.71	8,308.29	23.00		100.00
Mathematics	9.5	5.00	7.47	11,341.44	38.58	78.95	21.05
Modern Languages	7.5	4.73	7.73	11,550.52	36.00	86.67	12.33
Physical Education	5.5	4.45	5.64	10,329.63	30.64	54.55	45.45
Science	8.5	5.11	5.33	10,807.29	29.16	100.00	
Social Studies	7.5	5.00	8.67	12,243.45	39.13	86.67	12.33
Business Education	6.0	3.67	6.50	9,898.66	42.00	16.67	83.33
Vocational Technical	12.0	3.96	7.42	10,684.52	37.33	91.67	8.33

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
Comprehensive I							
Christian Ethics							
English	12.5	4.52	5.44	10,229.43	33.36	44.00	56.00
Fine Arts	2.0	4.50	10.00	12,337.00	40.50	100.00	
Home Economics	3.0	4.67	8.00	11,542.33	42.33		100.00
Mathematics	8.0	5.12	8.50	12,278.87	37.88	100.00	
Modern Languages	6.0	4.33	5.50	10,169.83	35.50	50.00	50.00
Physical Education	5.0	5.00	4.80	10,277.20	28.20	60.00	40.00
Science	10.0	5.10	6.70	11,352.28	34.60	100.00	
Social Studies	8.0	5.37	8.27	12,329.37	35.75	100.00	
Business Education	5.0	4.20	7.20	10,854.20	35.60	40.00	60.00
Vocational Technical	11.0	4.09	7.45	10,933.46	41.73	90.91	9.09

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
Comprehensive J							
Christian Ethics							
English	10.5	4.38	7.24	10,715.80	35.57	71.43	28.57
Fine Arts	2.0	3.50	8.00	9,335.75	36.00	100.00	
Home Economics	2.0	4.00	4.50	9,147.00	27.00		100.00
Mathematics	7.5	4.40	8.73	11,389.19	38.13	100.00	
Modern Languages	3.5	4.00	6.00	9,975.43	37.29	57.14	42.85
Physical Education	4.0	4.25	4.00	9,224.00	26.75	50.00	50.00
Science	6.5	4.54	5.92	10,247.23	35.85	100.00	
Social Studies	5.0	4.40	6.20	10,285.20	35.00	100.00	
Business Education	6.0	3.17	4.83	8,645.16	41.00	50.00	50.00
Vocational Technical	14.5	3.55	4.07	8,660.51	35.34	79.31	20.69

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
Comprehensive K							
Christian Ethics							
English	9.0	4.56	8.94	11,126.21	44.67	66.67	33.33
Fine Arts	2.0	4.00	6.75	9,905.00	36.00	100.00	
Home Economics	1.0	4.00	10.00	11,612.50	51.00		100.00
Mathematics	4.5	4.67	9.78	12,122.22	38.89	100.00	
Modern Languages	2.0	5.00	6.50	10,875.00	35.00	100.00	
Physical Education	3.0	4.33	5.33	9,514.00	30.00	66.67	33.33
Science	5.5	5.00	8.91	11,907.27	34.27	100.00	
Social Studies	5.5	4.73	10.00	11,560.90	44.36	100.00	
Business Education	6.5	4.31	5.85	9,798.92	37.08	53.85	46.15
Vocational Technical	12.0	4.25	7.54	10,821.56	37.25	91.67	8.33

TABLE XXXV (Continued)

AVERAGE TEACHING QUALIFICATIONS, EXPERIENCE, SALARY, AGE, AND SEX OF TEACHERS BY CURRICULAR PROGRAM

Curricular Program	Number Teachers	Average Training	Average Experience	Average Salary	Average Age	Per Cent Male	Per Cent Female
All Schools Combined							
Christian Ethics	4.0	4.75	2.25	8,820.25	26.50	100.00	
English	9.0	4.48	6.89	10,498.13	36.95	60.45	39.55
Fine Arts	14.5	4.31	6.38	10,041.48	35.59	82.76	17.24
Home Economics	22.5	4.29	5.38	9,536.16	33.89		100.00
Mathematics	69.5	4.69	8.02	11,298.31	37.71	87.59	12.41
Modern Languages	35.0	4.41	6.50	10,395.86	35.29	62.86	37.14
Physical Education	40.0	4.15	4.59	8,652.76	28.45	52.56	47.44
Science	71.5	4.78	6.79	10,802.50	34.29	96.40	3.60
Social Studies	57.5	4.77	7.71	11,061.26	37.08	90.09	9.91
Business Education	50.0	3.64	5.71	9,133.23	35.98	37.11	62.89
Vocational Technical	93.5	3.76	6.27	9,638.98	36.65	87.91	12.09

APPENDIX E

DIRECT INSTRUCTIONAL PER STUDENT-COURSE COSTS BY CURRICULAR PROGRAM BY COMPREHENSIVE

TABLE XXXVI

DIRECT INSTRUCTIONAL PER STUDENT-COURSE COSTS BY CURRICULAR PROGRAM

HIGH SCHOOL A

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	330	$ 16,946.03	$ 51.35	$ 54.14
Fine Arts	2	2	92	6,286.89	63.61	20.09
Home Economics	1	1	72	4,656.76	64.67	14.87
Mathematics	1	1	336	21,875.02	65.10	69.89
Modern Languages	1	1	148	3,942.25	26.64	12.59
Physical Education	1	1	442	25,008.45	56.58	79.90
Science	1	1	314	13,559.39	43.18	43.32
Social Sciences	2	2	389	14,377.17	36.95	45.93
Agriculture						
Business Education	3	3	515	20,070.89	38.97	64.12
Commercial Cooking	1	1	18	1,656.27	92.01	5.29
Cosmetology						
Drafting						
Electricity						
General	1	1	29	1,910.22	65.87	6.10
Industrial Laboratory						
Mechanical						
Media Technology						
Structural						
Technology						
Vocational A	8	9	204	10,129.95	44.15	32.36
Totals	23	24	2,889	$ 140,419.29	$ 48.60	$ 448.62

TABLE XXXVI (Continued)

HIGH SCHOOL A

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	222	$ 12,580.26	$ 56.67	$ 56.67
Fine Arts	2	2	60	3,419.80	57.00	15.40
Home Economics	1	1	15	632.28	42.15	2.80
Mathematics	2	2	235	12,258.73	52.16	55.22
Modern Languages	1	1	109	3,502.82	32.14	15.77
Physical Education						
Science	4	4	351	21,476.58	61.19	96.74
Social Studies	4	4	336	13,854.52	41.23	62.41
Agriculture	1	2	7	3,087.51	441.07	13.90
Business Education	7	7	281	14,965.38	53.26	67.41
Commercial Cooking	1	1	15	1,724.68	110.79	7.77
Cosmetology	1	3	23	3,772.84	164.04	16.99
Drafting	1	2	29	5,096.83	175.75	22.96
Electricity	2	3	29	7,024.32	242.22	31.64
General						
Industrial Laboratory						
Mechanical	2	4	59	7,902.77	134.25	35.60
Media Technology						
Structural						
Technology A						
Vocational A						
Totals	30	38	1,771	$ 111,299.32	$ 62.84	$ 501.35

TABLE XXXVI (Continued)

HIGH SCHOOL A

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	199	$ 13,031.82	$ 65.49	$ 51.92
Fine Arts	1	1	18	2,292.58	127.37	9.13
Home Economics	1	1	13	700.35	53.87	2.79
Mathematics	2	2	287	15,066.82	52.49	60.03
Modern Languages	1	1	127	4,688.02	36.91	18.68
Physical Education						
Science	4	4	356	23,034.21	64.70	91.77
Social Studies	4	4	314	15,349.75	48.88	16.33
Agriculture	1	2	6	2,675.82	445.97	10.66
Business Education	7	7	177	10,981.61	62.04	43.75
Commercial Cooking	1	1	8	1,722.83	215.35	6.86
Cosmetology	1	3	19	3,772.84	198.57	15.03
Drafting	1	2	24	5,096.83	212.37	20.31
Electricity	2	3	24	6,457.27	269.05	25.73
General						
Industrial Laboratory						
Mechanical	2	4	28	7,920.77	282.88	31.56
Media Technology						
Structural						
Technology						
Vocational A						
Totals	29	37	1,600	$ 112,841.52	$ 70.52	$ 499.57

TABLE XXXVI (Continued)

COMPREHENSIVE A

Division IV Program Area, Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	3	6	751	42,558.11	56.66	54.07
Fine Arts	5	5	187	11,999.27	64.16	15.25
Home Economics	3	3	100	5,989.20	59.89	7.61
Mathematics	5	5	858	49,200.57	57.34	62.53
Modern Languages	3	3	384	12,133.09	31.60	15.41
Physical Education	1	1	442	25,008.45	56.58	31.78
Science	9	9	1021	58,070.18	56.87	73.79
Social Studies	8	8	1039	43,581.44	41.95	55.38
Agriculture	2	4	13	5,763.33	443.33	7.32
Business Education	17	17	973	46,017.88	47.29	58.47
Commercial Cooking	3	3	41	5,103.78	124.48	6.49
Cosmetology	2	6	42	7,545.68	179.66	9.59
Drafting	2	4	53	10,193.66	192.33	12.95
Electrical	4	6	53	13,481.59	254.37	17.13
General	1	1	29	1,910.22	65.87	2.43
Mechanical	4	8	87	15,841.54	182.09	20.13
Medial Technology						
Structural Technology						
Vocational A	284	8	204	10,129.95	49.66	12.87
Totals	80	95	6277	364,527.00	58.07	463.19

TABLE XXXVI (Continued)

HIGH SCHOOL B

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	2	479	$ 17,014.06	$ 35.52	$ 73.65
Fine Arts	3	3	76	4,285.17	56.38	18.55
Home Economics	1	1	86	3,794.34	44.12	16.43
Mathematics	2	2	425	13,132.39	30.89	56.85
Modern Languages	1	1	100	3,860.37	38.60	16.71
Physical Education	1	0	228	4,281.35	18.78	18.53
Science	1	1	243	6,700.49	27.57	29.01
Social Studies	2	2	249	10,528.12	42.28	45.58
Agriculture	2	2	24	1,362.18	56.76	5.90
Business Education	2	2	143	4,852.81	33.94	21.01
Commercial Cooking						
Cosmetology						
Drafting	1	1	99	3,041.04	30.72	13.16
Electricity	1	1	23	2,043.41	88.84	8.85
General						
Industrial Laboratory						
Mechanical	1	1	52	3,426.23	65.89	14.83
Media Technology						
Structural	1	1	36	2,700.00	75.00	11.69
Technology						
Vocational A						
Totals	21	20	2,263	$ 79,978.55	$ 35.34	$ 346.23

TABLE XXXVI (Continued)
HIGH SCHOOL B

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	2	344	$ 13,415.66	$ 39.00	$ 74.12
Fine Arts	3	3	40	3,775.88	94.40	20.86
Home Economics	4	2	122	2,548.10	20.89	14.08
Mathematics	3	3	267	10,158.08	38.04	56.12
Modern Languages	1	1	53	1,977.34	37.31	10.92
Physical Education	2	1	179	4,112.25	22.97	22.72
Science	4	4	340	12,893.15	37.92	71.23
Social Studies	2	2	197	9,098.64	46.18	50.26
Agriculture	3	3	35	2,098.55	59.96	11.59
Business Education	7	7	99	6,793.35	68.62	37.53
Commercial Cooking						
Cosmetology						
Drafting	2	4	17	2,137.50	125.74	11.81
Electricity	2	4	9	4,314.88	479.43	23.84
General						
Industrial Laboratory						
Mechanical	3	9	18	4,834.89	268.60	26.71
Media Technology						
Structural	1	3	3	2,315.00	771.67	12.79
Technology						
Vocational A						
Totals	39	48	1,723	$ 78,371.63	$ 45.49	$ 432.99

TABLE XXXVI (Contined)

HIGH SCHOOL B

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	2	359	$ 13,772.78	$ 38.36	$ 68.52
Fine Arts	3	3	29	2,638.87	91.00	13.13
Home Economics	4	2	95	2,336.36	24.59	11.62
Mathematics	2	2	293	10,501.00	35.84	52.24
Modern Languages	1	1	57	1,840.45	32.29	9.16
Physical Education	2	1	107	3,492.46	32.64	17.37
Science	4	4	291	12,199.53	41.92	60.69
Social Studies	3	3	227	11,125.29	49.01	55.35
Agriculture	3	3	16	2,209.09	138.07	10.99
Business Education	7	7	134	7,629.08	56.93	37.96
Commercial Cooking						
Cosmetology						
Drafting	2	4	18	2,114.18	117.45	10.51
Electricity	1	3	7	2,756.25	393.75	13.71
General						
Industrial Laboratory						
Mechanical	3	9	12	4,682.52	390.21	23.30
Media Technology						
Structural	1	3	2	1,894.09	947.04	9.42
Technology						
Vocational A						
Totals	38	47	1,647	$ 79,191.94	$ 48.08	$ 393.99

TABLE XXXVI (Continued)

COMPREHENSIVE B

Division IV Program Area Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	6	6	1182	$ 44,202.00	$ 37.40	$ 71.99
Fine Arts	9	9	145	10,699.92	73.79	17.43
Home Economics	9	5	303	8,678.80	28.64	14.13
Mathematics	7	7	985	33,791.52	34.31	55.04
Modern Languages	3	3	210	7,678.16	36.56	12.51
Physical Education	5	2	514	11,886.00	21.28	19.36
Science	9	9	874	31,793.17	36.37	51.78
Social Studies	7	7	673	30,752.05	45.69	50.09
Agriculture	8	8	75	5,674.82	75.66	9.24
Business Education	16	16	376	19,275.24	51.26	31.39
Drafting	5	9	134	7,279.72	54.37	11.87
Electrical	4	8	39	9,114.54	233.71	14.84
Mechanical	7	19	82	12,943.64	157.85	21.08
Structural	3	7	41	6,909.09	168.51	11.25
Driver Education	1	0	220	2,457.57	11.17	4.00
Guidance	2	0	375	2,966.52	7.91	4.83
Totals	101	115	6228	246,109.87	39.52	400.83

TABLE XXXVI (Continued)

HIGH SCHOOL C

Program Area Grade Nine	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
Home Economics[a]	1	1	15	$ 1,958.10	$ 130.54	$ 130.54
General	1	1	112	7,305.80	65.24	17.48
Total	1	1	127	$ 9,263.90	$ 72.94	$ 617.59

[a] There are fifteen part time students taking Home Economics only.

TABLE XXXVI (Continued)
HIGH SCHOOL C

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	192	$ 12,222.24	$ 63.66	$ 59.04
Fine Arts						
Home Economics	1	1	121	7,832.40	64.73	37.84
Mathematics	2	2	223	14,159.74	63.49	68.40
Modern Languages	1	1	76	4,181.46	55.02	20.20
Physical Education	2	1	239	5,380.10	22.51	25.99
Science	1	1	196	8,578.18	43.77	41.44
Social Studies	2	2	259	13,611.48	52.55	65.76
Agriculture	2	2	39	2,564.10	65.75	12.39
Business Education	2	2	178	5,999.90	33.71	28.99
Commercial Cooking	1	1	8	667.22	83.40	3.22
Cosmetology						
Drafting	2	2	35	1,618.87	46.25	7.82
Electricity	2	2	40	2,389.76	59.74	11.54
General	1	1	10	1,647.07	164.71	7.96
Industrial Laboratory						
Mechanical	2	2	77	5,009.81	65.06	24.20
Media Technology						
Structural	1	1	24	2,207.77	91.99	10.67
Technology						
Vocational A						
Totals	23	22	1,717	$ 88,070.09	$ 51.29	$ 425.46

TABLE XXXVI (Continued)

HIGH SCHOOL C

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	137	$ 7,868.33	$ 57.43	$ 55.80
Fine Arts						
Home Economics	3	1 1/2	158	3,916.20	24.79	27.77
Mathematics	3	3	157	5,828.59	37.12	41.34
Modern Languages	1	1	61	2,855.25	46.81	20.25
Physical Education	2	1	128	4,284.91	33.48	30.39
Science	4	4	224	9,718.71	43.39	68.93
Social Studies	2	2	181	7,271.34	40.17	51.57
Agriculture						
Business Education	4	4	119	4,479.81	37.65	31.77
Commercial Cooking	1	3	3	242.12	80.71	1.72
Cosmetology						
Drafting	1	1	20	2,072.65	103.63	14.70
Electricity	2	2	18	1,593.17	88.51	11.30
General						
Industrial Laboratory						
Mechanical	2	2	37	2,710.36	73.25	19.22
Media Technology						
Structural	1	1	8	1,051.32	131.42	7.46
Technology						
Vocational A						
Totals	27	27 1/2	1,251	$ 53,918.76	$ 43.10	$ 382.40

TABLE XXXVI (Continued)

HIGH SCHOOL C

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	139	$ 6,232.26	$ 44.84	$ 38.47
Fine Arts						
Home Economics	2	1	91	3,979.37	43.73	24.56
Mathematics	2	2	202	6,966.57	34.48	43.00
Modern Languages	1	1	51	2,684.12	52.63	16.57
Physical Education	2	1	121	4,391.42	36.29	27.11
Science	5	5	215	11,202.08	52.10	69.14
Social Studies	2	2	228	9,248.56	40.56	57.09
Agriculture	3	3	15	2,564.10	170.94	15.83
Business Education	9	9	105	10,156.27	96.73	62.69
Commercial Cooking	1	1	3	242.14	80.71	1.49
Cosmetology						
Drafting	1	1	8	1,036.07	129.51	6.40
Electricity	2	2 1/2	16	1,832.66	114.54	11.31
General						
Industrial Laboratory						
Mechanical	2	2	38	2,745.41	72.25	16.95
Media Technology						
Structural	1	1	10	1,086.36	108.64	6.71
Technology						
Vocational A						
Totals	34	32 1/2	1,242	$ 64,337.39	$ 51.88	$ 397.14

TABLE XXXVI (Continued)
COMPREHENSIVE C

Division IV Program Area Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	3	6	468	26,322.83	56.25	50.14
Fine Arts						
Home Economics	8	4 1/2	400	17,686.07	44.22	33.69
Mathematics	7	7	582	26,954.90	46.31	51.34
Modern Languages	3	3	188	9,720.83	51.71	18.52
Physical Education	6	3	488	14,056.43	28.80	26.77
Science	10	10	635	29,498.97	46.46	56.19
Social Studies	6	6	668	30,131.38	45.11	57.39
Agriculture	6	6	54	5,128.20	94.97	9.79
Business Education	15	15	402	20,635.98	51.33	39.31
Commercial Cooking	3	3	14	1,151.56	82.25	2.19
Cosmetology						
Drafting	4	4	63	4,727.59	75.04	9.01
Electrical	6	6 1/2	74	5,815.59	78.59	11.08
General	2	2	234	8,952.87	38.26	17.05
Mechanical	6	6	152	10,465.58	68.85	19.93
Media Technology						
Structural	3	3	42	4,345.45	103.46	8.27
Technology						
Vocational A						
Totals	82	85	4464	215,593.56	48.30	410.65

TABLE XXXVI (Continued)
HIGH SCHOOL D

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	2	361	$ 10,404.45	$ 28.82	$ 63.83
Fine Arts						
Home Economics	1	1	57	3,992.30	70.04	24.49
Mathematics	3	3	356	12,320.02	34.70	75.59
Modern Languages	1	1	84	4,683.72	55.76	28.73
Physical Education	2	1	181	4,210.68	23.26	25.83
Science	1	1	180	6,569.95	36.50	40.31
Social Studies	2	2	201	8,205.52	40.82	50.34
Agriculture						
Business Education	2	2	205	6,726.05	32.81	41.26
Commercial Cooking						
Cosmetology						
Drafting	1	1	53	3,741.03	70.59	22.95
Electricity	1	1	56	1,906.25	52.95	11.69
General						
Industrial Laboratory						
Mechanical	1	1	58	2,310.03	39.83	14.17
Media Technology						
Structural	1	1	44	3,232.22	73.46	19.83
Technology						
Vocational A						
Totals	18	17	1,816	$ 68,302.22	$ 37.61	$ 419.03

TABLE XXXVI (Continued)

HIGH SCHOOL D

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	2	359	$ 10,928.79	$ 30.44	$ 60.38
Fine Arts						
Home Economics	1	1	24	2,066.52	86.10	11.42
Mathematics	3	3	311	10,185.00	32.74	56.27
Modern Languages	1	1	83	2,239.16	26.98	12.37
Physical Education	2	1	202	3,942.42	19.52	21.78
Science	3	3	304	10,998.57	36.18	60.77
Social Studies	2	2	213	8,053.55	37.81	44.49
Agriculture						
Business Education	5	5	119	4,236.25	35.60	23.40
Commercial Cooking						
Cosmetology						
Drafting	1	1	16	1,087.63	67.98	6.01
Electricity	1	1	25	1,895.13	75.81	10.47
General						
Industrial Laboratory						
Mechanical	1	1	41	1,991.09	48.56	11.00
Media Technology						
Structural	1	1	13	1,032.33	79.41	5.70
Technology						
Vocational A						
Totals	23	22	1,710	$ 58.656.44	$ 34.30	$ 324.07

TABLE XXXVI (Continued)
HIGH SCHOOL D

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	2	264	$ 9,260.64	$ 35.08	$ 67.11
Fine Arts						
Home Economics	1	1	10	1,033.26	103.33	7.49
Mathematics	3	3	208	8,979.25	43.17	65.07
Modern Languages	1	1	56	2,429.88	43.39	17.61
Physical Education	2	1	161	3,076.16	19.01	22.29
Science	4	4	217	10,623.08	48.95	76.98
Social Studies	3	3	166	5,231.89	31.51	37.91
Agriculture						
Business Education	3	3	30	1,074.33	35.81	7.79
Commercial Cooking						
Cosmetology						
Drafting						
Electricity	1	1	16	1,048.65	65.54	7.58
General						
Industrial Laboratory						
Mechancial	1	1	17	796.49	46.85	5.77
Media Technology						
Structural	1	1	12	1,292.09	107.67	9.36
Technology						
Vocational A						
Totals	22	21	1,157	$ 44,845.72	$ 38.76	$ 324.97

TABLE XXXVI (Continued)

COMPREHENSIVE D

Division IV Program Area Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	6	6	984	30,593.88	31.09	63.47
Fine Arts						
Home Economics	3	3	91	7,092.08	77.93	14.71
Mathematics	6	6	874	31,484.29	36.02	65.32
Modern Languages	3	3	223	9,352.76	41.94	19.40
Physical Education	6	3	544	11,229.26	20.64	23.30
Science	8	8	701	28,191.60	40.22	58.49
Social Studies	6	6	580	21,490.96	37.05	44.59
Agriculture						
Business Education	10	10	354	12,036.63	34.00	24.97
Commercial Cooking						
Cosmetology						
Drafting	2	2	69	4,828.66	69.98	10.02
Electrical	3	3	77	4,850.03	62.99	10.06
General						
Mechanical	3	3	116	5,097.61	43.94	10.58
Media Technology						
Structural	3	3	69	5,556.64	80.53	11.53
Technology						
Vocational A						
Totals	59	56	4681	171.803.81	36.70	356.44



TABLE XXXVI (Continued)

HIGH SCHOOL E

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	4	310	$ 19,399.37	$ 62.58	$ 63.60
Fine Arts	1	1	26	1,241.97	47.77	4.07
Home Economics	1	1	83	7,947.58	95.75	26.06
Mathematics	3	3	425	19,796.53	46.58	22.80
Modern Languages	3	3	121	8,207.21	67.83	26.91
Physical Education	2	1	358	5,298.88	14.80	17.37
Science	1	1	300	15,800.64	52.67	51.81
Social Studies	2	2	328	14,629.93	44.60	47.97
Agriculture						
Business Education	7	7 1/2	316	15,394.04	48.72	50.47
Commercial Cooking	1	1	54	1,923.44	35.62	6.31
Cosmetology						
Drafting	1	1	22	2,796.59	127.12	9.17
Electricity	1	1	66	4,495.67	68.12	14.74
General						
Industrial Laboratory						
Mechancial	1	1	91	7,179.13	78.89	23.58
Media Technology						
Structural	1	1	11	1,264.44	114.95	4.15
Technology						
Vocational A	3	3	101	15,081.10	149.32	49.45
Totals	30	31 1/2	2,612	$ 140,456.52	$ 53.77	$ 460.51

TABLE XXXVI (Continued)

HIGH SCHOOL E

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	269	$ 20,114.13	$ 74.77	$ 64.68
Fine Arts	1	1	31	2,125.22	68.56	6.83
Home Economics	4	2	125	7,838.99	62.71	25.21
Mathematics	2	2	330	16,684.73	50.56	53.65
Modern Languages	4	4	117	6,858.57	58.62	22.05
Physical Education	1	1	63	2,751.52	43.67	8.85
Science	3	3	482	28,070.76	58.24	90.26
Social Studies	2	2	294	12,966.69	44.10	41.69
Agriculture						
Business Education	8	7	239	11,343.41	47.46	36.47
Commercial Cooking	1	1	5	485.55	97.11	1.56
Cosmetology						
Drafting	1	1	4	1,532.14	383.04	4.93
Electricity	1	1	12	1,176.39	98.03	3.78
General						
Industrial Laboratory						
Mechanical	3	3	88	4,690.98	53.31	15.08
Media Technology						
Structural	1	1	3	1,392.86	464.29	4.48
Technology						
Vocational A						
Totals	33	31	2,062	$ 118,031.94	$ 57.24	$ 379.52

TABLE XXXVI (Continued)

HIGH SCHOOL E

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	2	411	$ 15,885.57	$ 38.65	$ 63.29
Fine Arts						
Home Economics						
Mathematics	2	2	308	14,731.05	47.82	58.68
Modern Languages	2	2	90	5,672.02	63.02	22.60
Physical Education	1	1	28	1,323.95	47.28	5.27
Science	3	3	392	23,195.21	59.17	92.41
Social Studies	3	3	306	15,594.86	50.96	62.13
Agriculture						
Business Education	5	5	147	9,537.29	64.88	38.00
Commercial Cooking						
Cosmetology	1	1	27	570.84	21.14	2.27
Drafting						
Electricity						
General						
Industrial Laboratory						
Mechanical						
Media Technology						
Structural	1	1	2	1,264.44	632.22	5.04
Technology						
Vocational A						
Totals	20	20	1,711	$ 87,775.23	$ 51.30	$ 348.08

TABLE XXXVI (Continued)

COMPREHENSIVE E

Division IV Program Area Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	5	8	990	55,399.70	55.96	63.82
Fine Arts	2	2	57	3,367.19	59.07	3.87
Home Economics	5	3	208	15,786.32	75.90	18.19
Mathematics	7	7	1063	51,212.31	48.17	59.00
Modern Languages	9	9	328	20,737.80	63.23	23.89
Physical Education	4	3	449	9,374.35	20.87	10.80
Science	7	7	1174	67,066.61	57.13	77.27
Social Studies	7	7	928	43,191.48	46.54	49.76
Agriculture						
Business Education	20	20	702	36,274.74	51.67	41.79
Commercial Cooking	2	2	59	2,408.99	40.83	2.78
Cosmetology	1	1	27	570.84	21.14	0.66
Drafting	2	2	26	4,328.73	166.49	4.99
Electrical	2	2	78	5,672.06	72.71	6.53
General						
Mechanical	4	4	179	11,870.11	66.31	13.68
Media Technology						
Structural	3	3	16	3,921.74	245.11	4.52
Technology						
Vocational A	0	0	101	15,081.10	149.32	17.37
Totals	80	80	6385	346,262.87	54.23	398.92

TABLE XXXVI (Continued)

HIGH SCHOOL F

Program Area Grade Eight	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	1	311	$ 20,445.39	$ 65.47	$ 65.56
Fine Arts	2	2	627	20,484.74	32.67	65.65
Home Economics	1	1	152	11,159.47	73.42	35.77
Mathematics	2	2	317	19,925.27	62.85	63.86
Modern Languages	1	1	313	11,896.74	38.06	38.13
Health & Physical Educ.	1	1	311	14,245.94	45.81	45.66
Science	1	1	310	8,640.00	27.87	27.69
Social Studies	1	1	312	11,722.70	37.57	37.57
Agriculture						
Business Education						
Commercial Cooking						
Cosmetology						
Drafting						
Electricity						
General	1	1	165	13,035.18	79.00	41.78
Industrial Laboratory						
Mechanical						
Media Technology						
Structural						
Technology						
Vocational A						
Totals	12	12	2,818	$ 131,555.43	$ 46.68	$ 421.65

TABLE XXXVI (Continued)

HIGH SCHOOL F

Program Area Grade Nine	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	2	350	$ 25,372.21	$ 72.50	$ 71.88
Fine Arts	2	2	698	23,667.96	33.91	67.04
Home Economics	1	1	166	12,344.25	74.58	34.97
Mathematics	2	2	359	25,035.82	79.84	70.92
Modern Languages	1	1	350	14,622.54	41.78	41.42
Health & Physical Educ.	1	1	350	18,927.25	54.08	53.62
Science	1	1	353	10,905.09	30.89	30.89
Social Studies	1	1	348	9,568.72	27.50	27.11
Agriculture						
Business Education						
Commercial Cooking						
Cosmetology						
Drafting						
Electricity						
General	1	1	188	14,947.79	79.72	42.35
Industrial Laboratory						
Mechanical						
Media Technology						
Structural						
Technology						
Vocational A						
Totals	12	12	3,162	$ 155,391.63	$ 49.14	$ 440.20

TABLE XXXVI (Continued)
COMPREHENSIVE F

Division III Program Area Grades 8 & 9 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	2	2	661	45,817.60	69.32	68.90
Fine Arts	4	4	1325	44,152.70	33.32	66.40
Home Economics	2	2	318	23,503.72	73.91	35.34
Mathematics	4	4	676	44,961.09	66.51	67.61
Modern Languages	2	2	667	26,519.28	39.76	39.88
Health & Physical Ed.	2	2	664	33,173.19	49.96	49.88
Science	2	2	663	19,545.09	29.48	29.39
Social Studies	2	2	660	21,291.42	32.26	32.02
General	2	2	353	27,982.97	79.27	42.08
Totals	22	22	9257	286,947.06	31.00	431.50

TABLE XXXVI (Continued)

HIGH SCHOOL F

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	3	6	378	$ 23,569.88	$ 62.35	$ 63.53
Fine Arts	1	1	92	4,043.70	43.95	10.90
Home Economics	1	1	86	5,634.38	65.52	15.19
Mathematics	4	4	674	24,557.94	36.43	66.19
Modern Languages	2	2	278	14,103.12	50.73	38.01
Physical Education	1	1	376	10,525.14	27.99	28.37
Science	3	3	364	14,082.13	38.69	37.96
Social Studies	4	4	411	16,417.06	39.94	36.16
Agriculture						
Business Education	2	2	309	8,806.05	28.50	23.74
Commercial Cooking						
Cosmetology						
Drafting						
Electricity						
General						
Industrial Laboratory						
Mechanical						
Media Technology						
Structural						
Technology	2	3	123	19,905.36	161.83	53.65
Vocational A						
Totals	23	27	3,091	$ 141,644.76	$ 45.82	$ 381.79

TABLE XXXVI (Continued)
HIGH SCHOOL F

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	3	6	329	$ 21,187.11	$ 64.40	$ 63.43
Fine Arts	1	1	48	2,136.61	44.51	6.40
Home Economics	4	2	64	2,269.10	35.45	6.79
Mathematics	4	4	572	23,247.30	40.64	69.60
Modern Languages	2	2	259	12,567.69	48.52	37.63
Physical Education						
Science	6	6	714	34,404.32	48.19	103.01
Social Studies	3	3	361	24,903.22	68.97	74.56
Agriculture						
Business Education	4	4 1/2	194	7,800.56	40.21	23.35
Commercial Cooking						
Cosmetology						
Drafting						
Electricity						
General						
Industrial Laboratory						
Mechanical						
Media Technology						
Structural						
Technology	1	2	28	7,204.63	257.31	21.57
Vocational A						
Totals	28	30 1/2	2,569	$ 135,720.54	$ 52.83	$ 406.35

TABLE XXXVI (Continued)
HIGH SCHOOL F

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	3	6	336	$ 31,571.61	$ 93.96	$ 103.51
Fine Arts	2	2	38	2,136.61	56.23	7.01
Home Economics	4	2	54	2,159.48	39.99	7.08
Mathematics	6	6	617	25,039.90	40.58	82.09
Modern Languages	2	2	217	12,381.14	57.06	40.59
Physical Education						
Science	10	10	572	43,648.80	76.31	143.11
Social Studies	3	3	437	24,919.72	57.02	81.70
Agriculture						
Business Education	5	5 1/2	75	5,861.97	78.16	19.22
Commercial Cooking						
Cosmetology						
Drafting						
Electricity						
General						
Industrial Laboratory						
Mechanical						
Media Technology						
Structural						
Technology	1	2	16	9,098.41	568.65	29.83
Vocational A						
Totals	36	38 1/2	2,362	$ 156,817.64	$ 66.39	$ 514.16

TABLE XXXVI (Continued)

COMPREHENSIVE F

Division IV Program Area Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	9	18	1043	76,328.60	73.18	75.57
Fine Arts	4	4	178	8,316.92	46.72	8.23
Home Economics	9	5	204	10,062.96	49.33	9.96
Mathematics	18	18	1863	72,845.14	39.10	72.12
Modern Languages	6	6	754	39,051.95	51.79	38.66
Physical Education	1	1	376	10,525.14	27.99	10.42
Science	19	19	1680	92,135.25	55.84	91.22
Social Studies	10	10	1209	66,240.00	54.78	65.58
Agriculture						
Business Education	11	12	578	22,468.58	38.87	22.25
Commercial Cooking						
Cosmetology						
Drafting						
Electrical						
General						
Mechanical						
Media Technology						
Structural						
Technology	4	7	167	36,208.40	216.82	35.85
Vocational A						
Totals	87	96	8022	434,182.94	53.97	429.88

TABLE XXXVI (Continued)

HIGH SCHOOL G

Program Area Grade Nine	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
Christian Ethics	2	2	440	$ 11,045.73	$ 25.10	$ 22.77
English	2	4	456	22,129.69	48.53	45.63
Fine Arts	4	4	74	5,562.85	75.17	11.47
Home Economics	2	2	162	14,013.56	85.60	28.89
Mathematics	2	2	490	29,050.22	59.29	59.90
Modern Languages	3	3	283	17,153.49	60.61	35.37
Health & Physical Educ.	2	2	833	20,332.58	24.41	41.92
Science	2	2	459	20,160.84	43.92	41.57
Social Studies	2	2	403	16,681.96	41.39	34.40
Business Education	2	2	332	9,613.67	29.86	19.82
Commercial Cooking	1	1	6	602.20	100.37	1.24
Totals	24	26	3,929	$ 166,346.75	$ 42.24	$ 342.98

TABLE XXXVI (Continued)

HIGH SCHOOL G

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
Christian Ethics	1	1	382	$ 8,206.61	$ 21.48	$ 19.63
English	2	3	398	21,532.42	54.10	51.51
Fine Arts	6	6	57	4,806.22	84.32	11.50
Home Economics	1	1	52	4,265.11	82.02	10.20
Mathematics	5	5	683	31,839.38	46.61	76.17
Modern Languages	1	1	120	7,646.45	63.72	18.29
Physical Education	1	1	56	3,423.74	61.14	8.19
Science	2	2	380	14,647.40	38.55	35.04
Social Studies	2	2	412	15,256.39	37.03	36.50
Agriculture						
Business Education	7	7	264	10,170.57	38.52	24.33
Commercial Cooking	2	2	27	1,831.40	67.83	4.38
Cosmetology	2	2	66	3,101.22	46.99	7.20
Drafting						
Electricity						
General	2	2	356	31,860.80	89.50	76.22
Industrial Laboratory						
Mechanical						
Media Technology						
Structural						
Technology						
Vocational A						
Totals	34	35	3,253	$158,587.71	$ 48.75	$ 379.40

TABLE XXXVI (Continued)

HIGH SCHOOL G

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
Christian Ethics	1	1	353	$ 8,574.29	$ 24.29	$ 22.38
English	2	4	386	19,103.57	49.49	49.88
Fine Arts	2	2	44	3,904.47	88.74	10.19
Home Economics	1	1	39	4,850.45	124.37	12.66
Mathematics	4	4	432	18,702.11	43.29	48.83
Modern Languages	4	4	140	9,619.39	68.71	25.12
Physical Education	1	1	39	3,260.89	83.61	8.51
Science	3	3	435	19,011.86	43.71	49.87
Social Studies	3	3	380	14,640.37	38.52	38.23
Agriculture						
Business Education	14	14	311	15,033.30	48.34	39.25
Commercial Cooking	1	3	25	1,881.00	75.24	4.91
Cosmetology	2	6	12	1,652.80	137.73	4.32
Drafting	2	2	31	2,855.48	92.11	7.46
Electricity	2	2	38	2,362.34	62.17	6.17
General						
Industrial Laboratory						
Mechanical	5	5	67	8,532.10	127.34	22.28
Media Technology	1	1	14	1,484.86	106.06	3.88
Structural	2	2	16	2,336.40	146.02	6.10
Techology						
Vocational A						
Totals	49	57	2,762	$137,805.68	$ 49.89	$ 359.81

TABLE XXXVI (Continued)

HIGH SCHOOL G

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
Christian Ethics	1	1	270	$ 6,779.07	$ 25.11	$ 19.59
English	5	5	602	19,823.38	32.93	57.29
Fine Arts	1	1	15	1,331.55	88.77	3.85
Home Economics	2	2	21	2,715.05	129.29	7.85
Mathematics	4	4	457	22,700.74	49.67	65.61
Modern Languages	3	3	133	7,478.69	56.23	21.61
Physical Education	1	1	36	2,839.44	78.87	8.21
Science	4	4	374	21,158.68	56.57	61.15
Social Studies	4	4	422	20,379.07	48.29	58.90
Agriculture						
Business Education	7	7	121	9,944.00	82.18	28.74
Commercial Cooking						
Cosmetology	1	1	20	1,374.00	68.70	3.97
Drafting	3	3	27	5,262.20	194.90	15.21
Electricity	2	2	26	2,433.42	93.59	7.03
General						
Industrial Laboratory						
Mechanical	5	5	52	5,983.76	115.07	17.29
Media Technology	1	1	36	3,151.25	87.53	9.11
Structural	2	2	15	2,376.00	158.40	6.67
Technology						
Vocational A						
Totals	46	46	2,627	$135,730.30	$ 51.67	$ 392.28

TABLE XXXVI (Continued)

COMPREHENSIVE G

Division IV Program Area Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
Christian Ethics	3	3	1005	23,559.97	23.44	20.54
English	9	13	1386	60,459.37	43.62	52.71
Fine Arts	9	9	116	10,042.24	86.57	8.76
Home Economics	4	3	112	11,830.61	108.84	10.31
Mathematics	13	13	1572	73,242.23	46.59	63.86
Modern Languages	9	9	393	24,744.53	62.96	21.57
Physical Education	3	3	131	9,524.07	72.70	8.30
Science	9	9	1189	54,817.94	46.10	47.79
Social Studies	10	10	1214	50,275.83	41.41	43.83
Agriculture						
Business Education	24	24	696	35,147.87	50.50	30.64
Commercial Cooking'	2	4	52	3,712.40	71.39	3.24
Cosmetology	4	6	98	6,128.02	62.53	5.34
Drafting	5	5	58	8,117.68	139.96	7.08
Electrical	4	4	64	4,795.76	74.93	4.18
General	2	2	356	31,860.80	89.50	27.78
Mechanical	9	9	119	14,515.86	121.98	12.65
Media Technology	2	2	50	4,636.11	92.72	4.04
Structural Technology	4	4	31	4,712.40	152.01	4.11
Totals	125	132	8642	432,123.69	50.00	376.74

TABLE XXXVI (Continued)

HIGH SCHOOL H

Program Area Grade Nine	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	2	405	$ 34,455.99	$ 85.08	$ 87.45
Fine Arts	2	2	312	12.839.10	41.15	32.59
Home Economics	1	1	196	11,123.28	56.75	28.23
Mathematics	1	1	430	19,053.39	44.31	48.36
Modern Languages	2	2	398	19,247.66	48.36	48.85
Health & Physical Educ.	1	1	406	17,373.59	42.79	44.10
Science	1	1	410	19,637.52	47.90	49.84
Social Studies	1	1	405	22,038.75	54.42	55.93
Agriculture						
Business Education	1	1	63	2,639.03	41.89	6.70
Commercial Cooking						
Cosmetology						
Drafting						
Electricity						
General						
Industrial Laboratory						
Mechanical						
Media Technology						
Structural						
Technology	1	1	216	29,342.34	135.84	74.47
Vocational A						
Totals	13	13	3,241	$187,750.65	$ 57.93	$ 476.52

TABLE XXXVI (Continued)

HIGH SCHOOL H

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	453	$ 42,401.15	$ 93.60	$ 94.62
Fine Arts	2	2	138	7,301.52	52.91	17.10
Home Economics	1	1	77	4,700.41	61.04	11.00
Mathematics	3	3	647	29,362.45	45.38	68.76
Modern Languages	2	2	257	13,017.87	50.65	30.49
Physical Education	1	0	402	16,289.32	40.52	38.15
Science	1	1	434	18,957.81	43.68	44.40
Social Studies	2	2	481	23,157.44	48.14	54.23
Agriculture						
Business Education	2	2	261	8,777.83	33.63	20.56
Commercial Cooking	1	1	61	3,617.37	59.30	8.47
Cosmetology						
Drafting	1	1	68	3,884.40	57.12	9.10
Electricity	1	1	79	5,885.52	74.50	13.78
General						
Industrial Laboratory						
Mechanical	1	1	101	12,325.79	122.04	28.87
Media Technology	1	1	16	1,068.91	66.81	2.50
Structural	1	1	56	5,389.35	96.24	12.62
Technology						
Vocational A						
Totals	21	21	3532	$196,137.14	$ 55.53	$ 459.34

TABLE XXXVI (Continued)

HIGH SCHOOL H

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	378	$ 36,250.00	$ 95.90	$ 94.40
Fine Arts	2	2	78	5,604.38	71.85	14.59
Home Economics	4	2	174	4,994.96	28.71	13.01
Mathematics	3	3	530	23,725.54	44.76	61.78
Modern Languages	1	1	163	7,535.08	46.23	19.62
Physical Education	1	1	113	5,180.18	45.84	13.49
Science	3	3	391	17,539.23	44.86	45.68
Social Studies	2	2	430	20,787.50	48.34	54.13
Agriculture						
Business Education	6	6	343	16,398.13	47.81	42.70
Commercial Cooking	1	1	31	1,170.11	37.75	3.05
Cosmetology						
Drafting	2	3	33	5,511.41	167.01	14.35
Electricity	1	1	29	2,890.96	99.69	7.53
General						
Industrial Laboratory						
Mechanical	6	10	147	12,636.64	85.96	32.91
Media Technology						
Structural	2	3	18	2,724.79	151.38	7.10
Technology						
Vocational A						
Totals	35	40	2,857	$ 162,948.91	$ 57.03	$ 424.35

TABLE XXXVI (Continued)

HIGH SCHOOL H

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	329	$ 34,537.08	$ 104.97	$ 92.35
Fine Arts	2	2	46	2,913.97	63.35	7.79
Home Economics	5	4	38	2,969.90	78.16	7.94
Mathematics	3	3	451	22,365.81	49.59	59.80
Modern Languages	1	1	112	5,621.40	50.19	15.03
Physical Education	1	1	80	3,462.28	43.28	9.26
Science	4	4	513	25,722.94	50.14	68.78
Social Studies	3	3	411	19,332.93	47.03	51.69
Agriculture						
Business Education	11	11	520	27,275.24	52.45	72.93
Commercial Cooking	1	1	20	1,171.46	58.57	3.13
Cosmetology						
Drafting	2	3	53	4,706.57	88.80	12.58
Electricity	2	3	32	5,463.02	170.72	14.61
General						
Industrial Laboratory						
Mechanical	5	9	65	10,869.43	167.22	29.06
Media Technology	1	1	14	1,282.69	91.62	3.43
Structural	1	1	23	2,664.56	115.85	7.12
Technology						
Vocational A						
Totals	43	49	2,706	$ 170,359.28	$ 62.96	$ 455.57

TABLE XXXVI (Continued)

COMPREHENSIVE H

Division IV Program Area Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	3	6	1160	113,188.23	97.58	95.52
Fine Arts	6	6	262	15,819.87	60.38	13.35
Home Economics	10	7	289	12,665.27	43.82	10.69
Mathematics	9	9	1628	75,453.80	46.35	63.67
Modern Languages	3	3	532	26,174.35	49.20	22.08
Physical Education	3	2	595	24,931.78	41.90	21.04
Science	8	8	1338	62,219.98	46.50	52.51
Social Studies	7	7	1322	63,277.87	47.87	53.39
Agriculture						
Business Education	19	19	1124	52,451.20	46.66	44.26
Commercial Cooking	3	3	112	5,958.94	53.20	5.03
Cosmetology						
Drafting	5	7	154	14,102.38	91.57	11.90
Electrical	4	5	140	14,239.50	101.71	12.01
General						
Mechanical	12	19	313	35,831.86	114.48	30.24
Media Technology	2	2	30	2,351.60	78.38	1.98
Structural Technology			97	10,778.70	111.12	9.10
Totals	99	103	9096	529,445.33	58.21	446.79

TABLE XXXVI (Continued)
HIGH SCHOOL 1

Program Area Grade Nine	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	2	421	$ 28,268.90	$ 67.15	$ 76.60
Fine Arts	2	2	164	7,164.69	43.69	19.42
Home Economics	1	1	166	15,357.90	82.52	41.62
Mathematics	1	1	413	20,445.05	49.50	55.41
Modern Languages	2	2	411	18,812.06	45.77	50.98
Health & Physical Educ.	1	1	317	19,540.93	61.64	52.96
Science	1	1	388	20,845.46	53.73	56.49
Social Studies	1	1	408	21,886.91	53.64	59.31
Agriculture						
Business Education						
Commercial Cooking						
Cosmetology						
Drafting	1	1	250	12,807.49	51.23	34.70
Electricity						
General	1	1	434	36,480.76	84.06	98.86
Industrial Laboratory						
Mechanical						
Media Technology						
Structural						
Technology						
Vocational A						
Totals	13	13	3,372	$ 201,610.15	$ 59.79	$ 546.36

TABLE XXXVI (Continued)

HIGH SCHOOL I

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	2	4	457	$ 32,098.43	$ 70.24	$ 74.99
Fine Arts	3	3	132	6,105.93	46.26	14.26
Home Economics	1	1	56	5,558.05	99.25	12.98
Mathematics	3	3	543	25,392.50	46.76	59.33
Modern Languages	2	2	329	14,472.71	43.99	33.81
Physical Education	1	0	413	13,962.43	33.81	32.62
Science	3	3	462	21,988.45	47.59	51.37
Social Studies	3	3	507	31,127.44	61.39	72.73
Agriculture						
Business Education	4	4	309	13,960.70	45.18	32.62
Commercial Cooking	1	1	14	980.80	70.06	2.29
Cosmetology						
Drafting	1	1	106	6,521.02	61.52	15.24
Electricity	1	1	33	2,887.43	87.50	6.75
General						
Industrial Laboratory						
Mechanical	1	1	168	13,067.20	77.78	30.53
Media Technology	1	1	143	8,885.98	62.14	20.76
Structural	1	1	40	5,481.25	137.03	12.81
Technology						
Vocational A						
Totals	28	29	3,712	$ 202,490.32	$ 54.55	$ 473.11

TABLE XXXVI (Continued)

HIGH SCHOOL 1

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	402	$ 34,298.69	$ 85.32	$ 89.79
Fine Arts	3	3	202	6,574.82	32.55	17.21
Home Economics	1	1	40	3,907.81	97.70	10.23
Mathematics	3	3	526	25,136.84	47.78	65.80
Modern Languages	2	2	268	14,691.24	54.82	38.46
Physical Education	1	1	67	4,951.43	73.90	12.96
Science	3	3	637	30,793.91	48.34	80.61
Social Studies	2	2	442	21,115.48	47.77	55.28
Agriculture						
Business Education	8	8	240	11,800.45	49.17	30.89
Commercial Cooking	1	1	7	792.23	113.18	2.07
Cosmetology						
Drafting	1	1	28	1,349.00	48.18	3.53
Electricity	1	1	12	1,635.60	136.30	4.28
General						
Industrial Laboratory						
Mechanical	3	3	84	7,964.50	94.82	20.85
Media Technology	1	1	36	2,962.00	82.28	7.75
Structural	1	1	12	3,987.75	332.31	10.44
Technology						
Vocational A						
Totals	32	33	3,003	$ 171,961.75	$ 57.26	$ 450.16

TABLE XXXVI (Continued)

HIGH SCHOOL I

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	1	2	340	$ 28,769.36	$ 84.62	$ 77.76
Fine Arts	2	2	66	2,446.43	37.07	6.61
Home Economics	4	2	45	2,877.79	63.95	7.78
Mathematics	4	4	488	26,130.27	53.54	70.62
Modern Languages	2	2	165	11,367.36	68.89	30.72
Physical Education	1	1	44	4,004.88	91.02	10.82
Science	4	4	637	37,132.37	58.29	100.38
Social Studies	3	3	411	21,852.83	53.16	59.06
Agriculture						
Business Education	13	13	358	23,405.50	65.38	63.26
Commercial Cooking						
Cosmetology						
Drafting	1	1	34	3,260.51	95.90	8.81
Electricity	1	1	5	1,251.83	250.37	3.38
General						
Industrial Laboratory						
Mechanical	3	3	31	3,292.54	106.21	8.90
Media Technology						
Structural	1	1	7	1,493.50	213.36	4.03
Technology						
Vocational A						
Totals	40	39	2,631	$ 167,285.17	$ 63.58	$ 452.12

TABLE XXXVI (Continued)

COMPREHENSIVE I

Division IV Program Area Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	4	8	1199	95,166.48	79.34	80.65
Fine Arts	8	8	400	15,127.18	37.82	12.82
Home Economics	6	4	141	12,343.65	87.54	10.46
Mathematics	11	11	1557	76,659.61	49.24	64.97
Modern Languages	6	6	762	40,531.31	53.19	34.35
Physical Education	3	2	524	22,918.74	43.74	19.42
Science	10	10	1736	89,914.73	51.79	76.19
Social Studies	10	10	1360	74,095.75	54.48	62.79
Agriculture						
Business Education	25	25	907	49,166.65	54.21	41.66
Commercial Cooking	2	2	21	1,773.03	84.43	1.50
Cosmetology						
Drafting	3	3	168	11,130.53	66.25	9.43
Electrical	3	3	50	5,774.86	115.50	4.89
General						
Mechanical	7	7	283	24,324.24	85.95	20.61
Media Technology	2	2	179	11,842.98	66.19	10.04
Structural	3	3	59	10,962.50	185.80	9.29
Technology						
Vocational A						
Totals	103	104	9346	541,737.24	57.96	459.10

TABLE XXXVI (Continued)

HIGH SCHOOL J

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	4	6	914	$ 32,977.55	$ 36.08	$ 68.13
Fine Arts	4	4	118	8,258.08	69.98	17.06
Home Economics	1	1	132	8,429.95	63.86	17.41
Mathematics	4	4	617	26,306.39	42.63	54.35
Modern Languages	2	2	304	17,597.07	57.89	36.36
Physical Education	1	0	827	14,414.32	17.43	29.78
Science	1	1	452	18,379.72	40.66	37.97
Social Studies	2	2	530	19,209.76	36.24	39.69
Agriculture	1	1	26	2,908.03	111.85	6.01
Business Education	3	3	511	16,420.43	32.13	33.93
Commercial Cooking	1	1	25	1,036.67	41.47	2.14
Cosmetology	1	1	72	2,117.98	29.42	4.38
Drafting	1	1	37	1,592.01	43.03	3.29
Electricity	1	1	18	632.92	35.16	1.31
General	2	2	218	17,639.45	80.91	36.45
Industrial Laboratory Mechanical	2	3	93	11,789.14	126.76	24.36
Media Technology Structural Technology	1	1	8	1,118.06	139.76	2.31
Vocational A	3	3	93	14,171.62	152.38	29.28
Totals	35	37	4,995	$ 214,999.14	$ 43.04	$ 444.21

TABLE XXXVI)Continued)

HIGH SCHOOL J

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	3	3	825	$ 30,012.14	$ 36.38	$ 72.49
Fine Arts	6	5	142	9,809.97	69.08	23.69
Home Economics	4	3 1/2	129	5,317.11	41.22	12.84
Mathematics	3	3	472	21,047.84	44.59	50.84
Modern Languages	3	3	199	10,024.66	50.38	24.21
Physical Education	2	1	110	7,858.63	71.44	18.98
Science	5	5	651	26,305.57	40.41	63.54
Social Studies	2	2	272	13,274.63	48.80	32.06
Agriculture	3	3	78	5,402.80	69.27	13.05
Business Education	8	8	546	19,838.78	36.33	47.92
Commercial Cooking	1	3	18	2,334.17	129.68	5.64
Cosmetology	1	3	30	3,400.83	113.36	8.21
Drafting	2	2	34	2,125.92	62.53	5.14
Electricity	5	7	38	3,016.58	79.38	7.29
General	1	1	8	1,118.06	139.76	2.70
Industrial Laboratory Mechanical	7	8	225	16,924.67	75.22	40.88
Media Technology Structural	3	3	31	3,806.94	122.80	9.20
Technology Vocational A						
Totals	58	60 1/2	3,808	$ 181,619.30	$ 47.69	$ 438.81

TABLE XXXVI (Continued)

HIGH SCHOOL J

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	3	3	843	$ 32,607.61	$ 38.68	$ 80.51
Fine Arts						
Home Economics	2	1 1/2	38	2,107.49	55.46	5.20
Mathematics	3	3	563	22,426.65	39.83	55.37
Modern Languages	2	2	164	6,566.00	40.04	16.21
Physical Education	1	1	26	2,043.20	78.58	5.04
Science	5	5	527	24,021.46	45.58	59.76
Social Studies	2	2	456	19,987.48	43.83	49.35
Agriculture	3	3	48	3,984.86	83.02	9.84
Business Education	7	7	198	12,431.30	62.78	30.69
Commercial Cooking	1	3	4	1,812.50	453.12	4.48
Cosmetology	2	2	31	5,117.29	165.07	12.64
Drafting	1	1	11	835.71	75.97	2.06
Electricity	2	2	7	1,281.39	183.06	3.16
General Industrial Laboratory						
Mechanical	5	7	78	12,547.90	160.87	30.98
Media Technology						
Structural Technology						
Vocational A						
Totals	39	42 1/2	2,994	$ 147,770.84	$ 49.36	$ 364.87

TABLE XXXVI (Continued)

COMPREHENSIVE J

Division IV Program Area Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	10	10	2582	95,597.30	37.02	73.36
Fine Arts	10	9	260	18,068.05	69.49	13.87
Home Economics	7	6	299	15,854.55	53.03	12.17
Mathematics	10	10	1652	69,780.88	42.24	53.55
Modern Languages	7	7	667	34,187.73	51.36	26.24
Physical Education	4	2	963	24,316.15	25.25	18.66
Science	11	11	1630	68,706.75	42.15	52.73
Social Studies	6	6	1258	52,471.87	41.71	40.27
Agriculture	7	7	152	12,295.69	80.89	9.43
Business Education	18	18	1255	48,690.51	38.80	37.37
Commercial Cooking	3	7	47	5,183.33	110.28	3.98
Cosmetology	4	6	133	10,636.10	79.97	8.16
Drafting	4	4	82	4,553.64	55.53	3.49
Electrical	8	10	63	4,930.89	71.19	3.78
General	3	3	226	18,757.51	83.00	14.40
Mechanical	14	18	396	41,261.71	104.20	31.67
Media Technology						
Structural Technology	4	4	39	4,925.00	158.87	3.78
Vocational A	3	3	93	14,171.62	152.38	10.88
Totals	133	141	11797	544,387.44	46.14	417.80

TABLE XXXVI (Continued)

HIGH SCHOOL K

Program Area Grade Ten	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Programs	Average Cost Per Pupil-Enrolled in Grade
English	3	6	346	$ 23,457.82	$ 67.80	$ 62.55
Fine Arts	2	2	156	7,395.20	47.41	19.72
Home Economics	2	1 1/2	92	5,017.30	54.54	13.38
Mathematics	6	6	473	22,529.88	47.63	60.08
Modern Languages	3	3	222	10,822.22	48.75	28.86
Physical Education	1	0	654	6,411.96	9.80	17.10
Science	2	2	352	14,120.00	40.11	37.65
Social Studies	3	3	414	18,272.60	44.13	48.73
Agriculture	1	1/2	37	1,179.11	31.87	3.14
Business Education	2	2	413	17,622.03	42.67	46.99
Commercial Cooking						
Cosmetology	1	1/2	73	2,420.92	33.16	6.46
Drafting	1	1	15	506.18	33.75	1.35
Electricity	1	1/2	37	1,547.74	41.83	4.13
General						
Industrial Laboratory						
Mechanical	4	2	251	6,636.32	26.44	17.70
Media Technology	1	1	124	4,233.69	34.14	11.29
Structural	1	1/2	46	1,895.10	41.20	5.05
Technology						
Vocational A	4	4	169	14,420.16	85.33	38.45
Totals	38	35 1/2	3,874	$ 158,452.23	$ 40.90	$ 422.53

TABLE XXXVI (Continued)

HIGH SCHOOL K

Program Area Grade Eleven	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	3	6	392	$ 35,697.09	$ 91.06	$ 89.24
Fine Arts	4	3	100	3,740.79	37.41	9.35
Home Economics	1	1	10	1,101.56	110.16	2.75
Mathematics	4	4	412	17,564.67	42.63	43.91
Modern Languages	3	3	191	7,596.66	39.77	18.99
Physical Education	2	2	110	8,194.68	74.50	20.49
Science	5	5	659	30,265.85	45.93	75.66
Social Studies	4	4	640	28,627.23	44.73	71.57
Agriculture	3	3	47	5,058.49	107.63	12.64
Business Education	7	6 1/2	333	12,492.43	37.51	31.23
Commercial Cooking						
Cosmetology	2	4 1/2	16	4,589.66	286.85	11.47
Drafting	4	7	36	5,159.54	800.26	12.90
Electricity	3	7 1/2	31	3,893.90	125.61	9.73
General						
Industrial Laboratory						
Mechanical	7	16 1/2	68	12,497.45	183.79	31.24
Media Technology						
Structural	3	7 1/2	28	4,863.08	173.68	12.16
Technology						
Vocational A	8	8	198	16,499.06	83.33	41.25
Totals	63	88 1/2	3,271	$ 197,842.14	$ 60.48	$ 494.60

TABLE XXXVI (Continued)

HIGH SCHOOL K

Program Area Grade Twelve	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Costs Per Pupil-Course in Program	Average Cost Per Pupil-Enrolled in Grade
English	3	6	317	$ 29,420.01	$ 92.96	$ 82.64
Fine Arts	2	2	44	1,642.44	37.33	4.61
Home Economics	1	1	15	1,361.19	90.75	3.82
Mathematics	4	4	445	21,448.49	48.20	60.25
Modern Languages	3	3	165	7,714.16	46.75	21.67
Physical Education	2	2	40	3,863.56	96.59	10.85
Science	4	4	486	24,803.34	51.04	69.67
Social Studies	3	3	359	16,166.83	45.15	45.41
Agriculture	2	2 1/2	20	2,991.98	149.60	8.40
Business Education	15	15 1/2	499	21,484.23	43.05	60.35
Commercial Cooking						
Cosmetology	1	3	9	3,578.88	397.65	10.05
Drafting	2	3	40	5,311.39	132.78	14.92
Electricity	3	7 1/2	12	9,603.15	800.26	26.98
General						
Industrial Laboratory						
Mechanical	5	13 1/2	53	11,827.18	223.15	33.22
Media Technology						
Structural	2	6	14	4,489.00	320.64	12.61
Technology						
Vocational A						
Totals	52	75	2,518	$ 165,705.83	$ 65.81	$ 465.47

TABLE XXXVI (Continued)

COMPREHENSIVE K

Division IV Program Area Grade 10, 11, 12 Combined	No. of Courses	No. of Credits	No. of Pupils in Courses	Total Direct Instructional Costs	Average Per-Student Program Cost	Average Cost Per Student Enrolled in Course
English	9	18	1054	88,574.92	84.04	78.32
Fine Arts	8	7	300	12,778.43	42.59	11.30
Home Economics	4	3.5	117	7,480.05	67.01	6.61
Mathematics	14	14	1330	61,543.04	46.27	54.41
Modern Languages	9	9	578	26,133.04	45.21	23.11
Physical Education	5	4	804	18,470.20	22.97	16.33
Science	11	11	1497	69,189.19	46.22	61.17
Social Studies	10	10	1413	63,066.66	44.63	55.76
Agriculture	6	6	104	9,229.58	88.76	8.16
Business Education	24	24	1245	51,598.69	41.44	45.62
Commercial Cooking						
Cosmetology	4	8	98	10,589.46	108.06	9.36
Drafting	7	11	91	10,977.11	120.63	9.71
Electrical	7	15.5	80	15,044.79	295.54	13.30
General						
Mechanical	16	32	372	30,960.95	83.22	27.37
Media Technology	1	1	124	4,233.69	34.14	3.74
Structural	7	14	88	11,247.18	127.81	9.94
Technology						
Vocational A	12	12	367	30,919.22	84.25	27.34
Totals	153	199	9661	522,035.44	54.03	461.57

APPENDIX F

PRORATION STATISTICS USED IN THE STUDY

TABLE XXXVII

PRORATION STATISTICS USED TO ALLOCATE INSTRUCTIONAL EQUIPMENT AND SUPPLY COSTS TO CURRICULAR PROGRAMS

Curricular Program	Per cent of Total Equipment and Supply Cost	
	Comprehensive C	Comprehensive D
English	0.85[a]	0.95[a]
Home Economics	4.67	5.19
Mathematics	0.65	0.73
Modern Languages	3.19	3.54
Physical Education	9.32	10.34
Science	2.36	2.62
Agriculture	4.83	
Business Education	13.24	14.69
Drafting	4.23	4.70
Electrical	7.60	8.43
Mechanical	22.36	24.81
Structural	5.09	5.66

[a] Based on Average Instructional and Supply Costs in Comprehensives A, B, E, F, G, H, I, J, and K.

TABLE XXXVIII

PRORATION STATISTICS USED TO ALLOCATE RESIDENT AND NON-RESIDENT IMPLEMENTARY COSTS TO CURRICULAR PROGRAMS

Curricular Program	Comprehensive A		B		C		D		E		F	
	Per Student Course in Program	% Per Student Enrolled in School	Per Student Course in Program	% Per Student Enrolled in School	Per Student Course in Program	% Per Student Enrolled in School	Per Student Course in Program	% Per Student Enrolled in School	Per Student Course in Program	% Per Student Enrolled in School	Per Student Course in Program	% Per Student Enrolled in School
Christian Ethics												
English	11.67[a]	11.96[b]	17.96	18.98	12.21	10.48	17.81	21.02	16.00	15.50	16.94	13.69
Fine Arts	3.29	3.27	4.35	2.33					0.97	0.89	7.28	8.50
Home Economics	1.64	1.59	3.53	4.87	8.20	8.96	4.13	1.94	4.56	1.70	4.65	4.85
Mathematics	13.48	13.67	13.73	15.82	12.50	13.04	18.33	18.67	14.79	16.65	16.37	18.51
Modern Languages	3.34	6.12	3.12	3.37	4.51	4.21	5.44	4.76	6.00	5.14	9.09	12.03
Physcial Education	6.86	7.04	4.83	8.25	6.52	10.93	6.54	11.62	2.70	7.03	6.06	9.83
Science	15.93	16.27	12.92	14.03	13.68	14.22	16.41	14.97	19.37	18.39	15.49	13.39
Social Studies	11.96	16.55	12.49	10.81	13.98	14.96	12.51	12.39	12.47	14.53	12.14	10.82
Agriculture	1.58	0.21	2.30	1.20	2.38	1.21						
Business Education	12.62	15.50	7.83	6.04	9.57	9.01	7.01	7.56	10.48	10.99	3.12	3.35
Commercial Cooking	1.40	0.65			0.53	0.31			0.70	0.92		
Cosmetology	2.07	0.51							0.16	0.42		
Drafting	2.80	0.84	2.96	2.15	2.19	1.41	2.81	1.47	1.25	0.41		
Electrical	3.70	0.84	3.70	0.62	2.70	1.66	2.82	1.64	1.64	1.22		
General	0.52	0.46			4.15	5.24					3.88	4.08
Mechanical	4.35	1.39	5.26	1.32	4.85	2.22	2.97	2.49	3.43	2.80		
Media Technology												
Structural			2.80	0.66	2.02	0.94	3.23	1.47	1.13	0.25		
Technology											5.02	0.97
Vocational A	2.98	3.25							4.35	1.58		
Driver Education			1.00	3.53								
Guidance			1.20	6.02								
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE XXXVIII (Continued)

Curricular Program	Comprehensive G		H		I		J		K	
	%		%		%		%		%	
	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School	Per Student Course in Program	Per Student Enrolled in School
Christian Ethics	5.78	11.49								
English	13.80	14.65	20.59	12.69	16.61	12.27	17.56	21.88	16.96	10.90
Fine Arts	2.61	1.51	3.40	4.65	3.00	5.51	3.32	2.20	2.45	3.11
Home Economics	4.32	2.18	3.32	3.93	3.73	3.58	2.91	2.53	1.43	1.83
Mathematics	17.09	16.41	13.18	16.68	13.06	14.92	12.81	14.00	11.79	13.77
Modern Languages	7.00	5.38	6.33	7.54	7.98	8.89	6.28	5.65	5.01	5.98
Physical Education	4.99	7.67	5.90	8.11	5.71	8.77	4.47	8.16	3.54	8.32
Science	12.53	13.11	11.41	14.17	14.90	16.09	12.62	13.82	13.25	15.50
Social Studies	11.19	12.86	11.90	14.00	12.91	13.39	9.64	10.66	12.08	14.63
Agriculture							2.26	1.29	1.77	1.08
Business Education	7.48	8.10	7.68	9.62	6.61	6.87	8.94	10.63	9.88	12.89
Commercial Cooking	0.72	0.46	0.83	0.91	0.24	0.16	0.95	0.40		
Cosmetology	1.02	0.78					1.95	1.13	2.03	1.01
Drafting	1.37	0.46	1.97	1.25	3.12	3.17	0.84	0.70	2.10	0.94
Electrical	0.80	0.51	1.99	1.13	0.78	0.38	0.91	0.53	2.88	0.83
General	5.32	2.83			4.91	3.29	3.45	1.91		
Mechanical	2.43	0.95	5.00	2.54	3.27	2.14	7.58	3.36	5.93	3.85
Media Technology	0.77	0.40	0.33	0.24	1.59	1.36			0.81	1.28
Structural	0.79	0.25	1.50	0.79	1.47	0.45	0.90	0.33	2.15	0.91
Technology			4.10	1.75						
Vocational A							2.60	0.79	5.92	3.80
Driver Education										
Guidance										
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE XXXIX

PRORATION USED TO ALLOCATE RESIDENT AND NON - RESIDENT IMPLEMENTARY COSTS TO CURRICULAR PROGRAM IN POPULATION

Curricular Program	Population Direct Instructional Cost	Per Cent
Christian Ethics	34,593.30	0.66
English	842,517.83	16.24
Fine Arts	183,545.60	3.54
Home Economics	172,506.86	3.32
Mathematics	709,906.16	13.69
Modern Languages	311,227.46	6.01
Physical Education	255,711.62	4.94
Science	761,810.32	14.69
Social Studies	624,998.08	12.05
Agriculture	38,091.62	0.75
Business Education	405,577.39	7.82
Commercial Cooking	25,893.71	0.50
Cosmetology	35,470.02	0.68
Drafting	95,047.43	1.80
Electrical	68,674.62	1.32
General	151,109.58	2.92
Mechanical	220,459.23	4.26
Media	32,948.72	0.64
Structure	63,281.94	1.22
Technology	65,550.38	1.27
Vocational	70,301.89	1.36
Driver Education	2,457.57	0.05
Guidance	2,966.52	0.06
Total	5,190,854.66	100.00

APPENDIX G

TOTAL COURSE COSTS BY FUNCTION OBJECT

EXPENDITURE CLASSIFICATION BY

POPULATION COMPREHENSIVES

TABLE XL

TOTAL COSTS IN EACH OF THE POPULATION COMPREHENSIVES BY A MODIFIED FUNCTION-OBJECT EXPENDITURE CLASSIFICATION

Expenditure Series	A	B	C	D	E	F	G	H	I	J	K	Totals
100 ADMINISTRATION	21,839.50	21,243.89	12,038.86	17,929.62	28,442.76	50,574.76	62,539.98	55,570.21	54,125.38	27,921.58	29,690.34	381,916.88
200 INSTRUCTION												
210 Salaries												
211 Teachers	384,248.69	277,832.22	240,250.00	197,978.91	397,851.06	747,688.18	614,209.16	804,476.99	787,977.92	585,687.17	553,259.83	5,591,460.12
212 Administrators	31,128.32	22,939.41	28,156.50	18,751.95	41,379.66	59,109.13	65,828.94	64,810.47	54,693.02	64,535.62	55,411.25	506,744.27
213 Other Inst.												
a) Library	11,133.99	10,471.99	6,143.00	9,526.49	12,140.00	12,519.99	21,464.59	9,863.99	9,007.99	18,299.98	12,390.00	132,962.01
b) AV & TV						3,678.45	26,082.38			2,156.25	13,789.22	45,706.33
c) Guidance	17,264.50	5,790.52	11,692.00	3,350.15	8,540.00	13,694.48	32,512.23	39,229.98	36,849.98	20,693.98	23,392.70	213,010.52
d) Other												
1. Internal Sub.							6,571.55					28,533.53
2. Sub Teacher	1,375.00	1,300.00	--	1,912.00	1,603.65	1,460.69		5,307.73	5,201.91	3,801.00	--	
215 Clerical & Bus Support Staff	28,079.88	9,783.00	8,937.27	8,556.79	16,064.23	28,669.15	27,300.08	24,513.47	26,779.03	30,153.50	20,306.87	229,143.26
216 AV & TV Tech.						27,152.02		4,672.00	5,225.61	12,942.50		49,992.13
230 Library Equip. and Supply	11,147.74	5,261.00	669.68	1,175.32	11,711.79	9,322.00	14,145.50	11,995.76	7,748.46	11,571.73	9,659.46	94,408.44
235 AV Equip & Supplies	7,962.67	2,412.50	419.77	736.68	8,389.14	5,961.00	14,896.00	2,488.28	3,472.42	6,428.75	6,100.54	59,267.75
236 ETV Equip. & Supplies						7,250.00	3,000.00		-	3,982.50		14,232.50
240 Inst Equip. & Supplies	32,321.55	13,911.00	7,658.61	5,342.00	19,572.91	37,432.06	42,980.60	21,380.48	22,460.54	29,306.97	36,643.24	269,009.96
242 General Equip & and Supplies and Texts	16,575.23	13,784.26	8,195.84	5,302.00	32,662.09	33,907.75	22,540.37	35,553.00	32,951.86	33,059.06	19,787.52	254,318.98
250 Other	912.74	3,448.50	3,647.00	1,009.50	4,854.72	3,770.31	15,598.93	19,866.65	19,422.98	20,174.49	28,257.47	120,963.29
251 Computer Centre							18,955.00					18,955.00
Total instructional	542,150.31	366,943.40	315,769.67	253,641.79	554,769.25	991,615.24	926,085.33	1,044,158.79	1,011,791.72	842,793.50	778,998.10	7,628,717.10
500 PUPIL TRANS.				37,084.00								37,084.00
600 PLANT OPERATION												
610 Salaries	67,339.72	27,263.04	23,373.32	23,369.90	41,243.63	61,759.52	73,872.35	49,718.91	48,919.07	87,517.49	66,975.78	571,352.73
640 Utilities												
a) Fuel	11,031.34	5,985.00	12,121.00	9,600.00	12,545.68	9,688.27	6,772.30	13,122.54	12,656.12	17,637.40	11,724.17	122,883.82
b) Light & Power	52,148.32	23,253.50		12,000.00	56,046.47	37,129.45	21,915.27	37,931.60	40,162.84	20,704.77	42,227.13	343,519.35
c) Telephone & Post.	2,005.70	1,458.50	1,418.95	400.00	3,458.10	2,397.18	3,111.42	2,088.23	2,380.16	5,461.59	33,328.01	27,507.84
d) Water	1,704.83	800.00	394.83	1,156.00	2,810.70	2,189.38	2,453.12	3,397.36	3,437.52	4,310.93	3,047.28	25,701.95

TABLE XL (Continued)

Expenditure Series	A	B	C	D	E	F	G	H	I	J	K	Totals
650 Supplies												
a) Custodial	6,235.69	2,557.50	3,726.55	6,360.67	11,989.04	5,613.10	7,736.58	2,973.77	3,121.35	6,265.94	4,527.14	61,107.33
b) Other						374.05	8,169.05					
651 Total Energy Supply and Contract			9,941.45							15,340.01		25,281.46
Total Plant Operation	140,465.60	61,317.54	50,976.10	52,886.57	128,093.62	119,150.95	124,030.09	109,232.41	110,677.06	157,238.13	131,829.51	1,185,897.58
700 PLANT MAINTENANCE												
710 Salaries								2,963.39	2,904.30			5,867.69
720 Repair & Replace	12,471.31	3,608.50	7,196.51	300.00	--	11,293.31	9,583.20	17,363.16	17,946.60	25,508.60	18,732.16	124,003.35
Total Maintenance	12,471.31	3,608.50	7,196.51	300.00	--	11,293.31	9,583.20	20,326.55	20,850.90	25,508.60	18,732.16	129,871.04
800 FIXED CHARGES	16,305.78	13,681.91	6,793.42	4,627.72	9,523.09	21,276.19	14,469.64	17,523.65	15,612.41	16,082.82	28,910.53	164,807.16
900 FOOD SERVICES												
910 Salaries	10,041.43	9,176.50	11,000.00	4,900.00	5,422.38	--	5,393.63	8,134.02	6,691.78	5,637.62	8,276.02	74,673.38
1000 STUDENT BODY					600.00							600.00
1200 CAPITAL OUTLAY	3,539.42	30,425.50	8,574.61	--	--	411.60	--	--	17,151.01	--	10,781.78	70,883.92
1300 DEBT SERVICE												
Principal and Interest	109,241.59	60,214.09	27,806.34	92,394.54	91,415.00	238,785.88	46,251.57	147,327.72	144,390.34		78,300.39	1,036,127.46
1400 TRANSFER						747.00	870.03	117,022.55	114,689.39			
TOTAL COSTS	856,054.94	566,638.78	440,155.52	463,764.24	818,266.10	1,433,885.03	1,189,169.47	1,402,282.20	1,381,290.60	1,075,182.25	1,085,518.83	10,712,207.96

[a] Transfer payment to another school board which does not have taxation priviledges relative to the educotion of Division II students. Does not represent an operational expenditure ond is not included in the totol operotional cost

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